

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**ORDER NO. R-2-2003-0009  
NPDES PERMIT NO. CA0037885**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:  
CONTRA COSTA COUNTY SANITATION DISTRICT NO. 5  
PORT COSTA, CONTRA COSTA COUNTY**

**FINDINGS**

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. *Discharger and Permit Application.* The Contra Costa Sanitation District No. 5 (hereinafter called the Discharger) has applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

**Facility Description**

2. The Discharger operates a municipal wastewater treatment plant (WWTP) that serves the community of Port Costa, which has a population of about 350 people. The Plant provides secondary treatment of domestic wastewater and to a lesser extent commercial wastewater. Currently, the Discharger treats about 0.006 million gallons per day (mgd) of wastewater, which is well below the WWTP's dry weather design capacity of 0.033 mgd (see also Finding 8 regarding design capacity).
3. The Discharger owns and maintains the sewer collection system, which consists of a few miles of terra-cotta pipe. All sewage drains to the WWTP by gravity.
4. The USEPA and the Board have classified this Discharger as a minor discharger.

**Purpose of Order**

5. This NPDES permit regulates the discharge of effluent from the Discharger's WWTP. Waste Discharge Requirements Order No. 95-127, adopted by the Board on June 21, 1995, used to govern this discharge. This Order rescinds the requirements of Order No. 95-127.

**Discharge Description**

6. The Report of Waste Discharge (ROWD), recent self-monitoring reports, and other relevant information describe the discharge as follows:
  - a. **Waste 001** consists of an average of about 0.006 mgd of treated domestic and commercial wastewater. Wastewater from the community of Port Costa is conveyed by gravity to an 86,000-gallon capacity, baffled septic tank where primary sedimentation occurs. From the septic tank, wastewater flows by gravity to a wet well where it mixes with treated wastewater at a ratio of about four or five parts of treated wastewater to one part septic tank effluent. After mixing, wastewater is pumped to a dosing structure, which distributes wastewater to

sand/gravel filter beds. All storm water at the facility infiltrates into the ground or enters the filter beds. From the sand/gravel beds, a portion of the treated wastewater is routed back to the wet well to mix with septic tank effluent. The remaining treated wastewater flows over a V-notch weir into a contact chamber, where it is chlorinated, and dechlorinated with sulfur dioxide, before discharge into Carquinez Strait, a water of the United States. The discharge occurs through a submerged outfall and diffuser approximately 60 feet offshore, at a depth of about 17.5 feet below mean lower low water (Location coordinates: 38°, 02', 55" N. Latitude; 122°, 10', 56" W. Longitude). To comply with Prohibition A.3 of the previous Order, the Discharger's diffuser must provide a minimum initial dilution of 10:1. Figure 1 shows a flow diagram for the WWTP.

7. The table below presents the quality of the discharge, as indicated in the Discharger's application for permit reissuance. To calculate the average value for constituents with both actual and nondetect values, the Discharger indicates that it used ½ of the method detection limit.

Parameter	Average	Daily Maximum
pH, standard units	--	7.4
BOD <sub>5</sub> , mg/L	2.8	10.0
TSS, mg/L	2.3	3.0
Total Coliform Bacteria (MPN/100 mL) <sup>1</sup>	<2	<2
Arsenic, µg/L	1.85	2.4
Cadmium, µg/L	0.105	0.11
Chromium, µg/L	0.3	0.5
Copper, µg/L	8.25	9.5
Lead, µg/L	<0.5	<0.5
Mercury, µg/L	<0.01	<0.01
Nickel, µg/L	3.4	3.8
Selenium, µg/L	0.3	0.5
Silver, µg/L	<0.06	<0.06
Zinc, µg/L	20	22

<sup>1</sup> From January through September 2001, the Discharger often reported total coliform levels at or above 16,000 MPN/100 mL. In characterizing effluent quality, the Discharger did not include these values, as it believed they were a result of improper procedures followed by treatment plant staff and were not indicative of current treatment plant performance. Board staff is undertaking an investigation to determine the validity of the Discharger's claims.

8. As indicated in Finding No. 6, wastewater treatment involves primary settling in a septic tank, secondary treatment in sand filters, and disinfection by chlorination. The WWTP consists of one (1) septic tank, four (4) sand filters, and one (1) disinfection tank. During a September 24, 2002, site visit by Board staff, the Discharger indicated that it no longer uses one of its four sand filter beds, as the concrete base of this sand filter bed leaks. Additionally, the Discharger explained that it needs to have the sand media on all of its filter beds replaced, but that it currently lacks access to the WWTP (the railroad crossing to the WWTP was destroyed about five years ago). The Discharger indicates that its WWTP can operate efficiently with only one or two sand filters since current flows are well below the design flow of the WWTP. All four sand filters must be operational for a design flow of 0.033 mgd to be allowable. The Discharger's application indicates that each sand filter treats 0.00825 mgd. Accordingly, this Order limits the average dry weather discharge to 0.025 mgd until the Discharger certifies that it has repaired the sand filter bed that leaks, and requires the Discharger to propose a time schedule for replacing the sand media on all of its filter beds.

9. Sludge Removal: The Discharger removes solids about once every four years from its septic tank for disposal at a septage tank receiving station (e.g., Central Contra Costa Sanitation District).

#### **Applicable Plans, Policies and Regulations**

##### ***Basin Plan***

10. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board (SWRCB) and the Office of Administrative Law on July 20, 1995 and November 13, 1995, respectively. A summary of the regulatory changes is contained in Title 23 of the California Code of Regulations, Section 3912. The Basin Plan identifies beneficial uses and water quality objectives (WQOs) for waters of the state in the Region, including surface waters and groundwaters. The Basin Plan also identifies discharge prohibitions intended to protect beneficial uses. This Order implements the Board's Basin Plan.

##### ***Beneficial Uses***

11. Beneficial uses for Carquinez Strait, as identified in the Basin Plan and based on known uses of the receiving water in the vicinity of the discharge, are:
  - a. Industrial Service Supply
  - b. Navigation
  - c. Water Contact Recreation
  - d. Non-contact Water Recreation
  - e. Commercial and Sport Fishing
  - f. Wildlife Habitat
  - g. Preservation of Rare and Endangered Species
  - h. Fish Migration
  - i. Fish Spawning
  - j. Estuarine Habitat

##### ***Regional Monitoring Program (RMP)***

12. On April 15, 1992, the Regional Board adopted Resolution No. 92-043 directing the Executive Officer to implement the RMP for San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region under authority of California Water Code Section 13267, to report on the water quality of the estuary. These permit holders responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute in lieu of individual receiving water monitoring. This effort has come to be known as the San Francisco Bay Regional Monitoring Program for Trace Substances.

##### ***State Implementation Policy (SIP)***

13. The SWRCB adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Policy or SIP) on March 2, 2000 and the Office of Administrative Law (OAL) approved the SIP on April 28, 2000. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the federal Clean Water Act. The SIP establishes implementation provisions for priority pollutant criteria promulgated by the USEPA through the National Toxics Rule (NTR) and California Toxics Rule (CTR), and for priority pollutant objectives established by the Regional Water Quality Control Boards (RWQCBs) in their water quality control

plans (basin plans). The SIP also establishes monitoring requirements for 2,3,7,8-TCDD equivalents, chronic toxicity control provisions, and Pollutant Minimization Programs.

***California Toxics Rule (CTR)***

14. On May 18, 2000, the USEPA published the *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (Federal Register, Volume 65, Number 97, 18 May 2000). These standards are generally referred to as the CTR. The CTR specified water quality criteria (WQC) for numerous pollutants, of which some are applicable to the Discharger's effluent discharges.

***Other Regulatory Bases***

15. WQOs/WQC and effluent limitations in this permit are based on the SIP; the plans, policies and WQOs and criteria of the Basin Plan; California Toxics Rule (Federal Register Volume 65, 97); *Quality Criteria for Water* (USEPA 440/5-86-001, 1986 and subsequent amendments, "USEPA Gold Book"); applicable Federal Regulations (40 CFR Parts 122 and 131); the National Toxics Rule (57 FR 60848, 22 December 1992 and 40 CFR Part 131.36(b), "NTR"); NTR Amendment (Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237); USEPA December 10, 1998 "National Recommended Water Quality Criteria" compilation (Federal Register Vol. 63, No. 237, pp. 68354-68364); and Best Professional Judgment (BPJ) as defined in the Basin Plan. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR 122.44(d) specifies that water quality based effluent limitations (WQBELs) may be set based on USEPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative WQC to fully protect designated beneficial uses. Discussion of the specific bases and rationale for effluent limits are given in the associated Fact Sheet for this Permit, which is incorporated as part of this Order.
16. In addition to the documents listed above, other USEPA guidance documents upon which BPJ was developed may include in part:
  - Region 9 Guidance For NPDES Permit Issuance, February 1994;
  - USEPA Technical Support Document for Water Quality Based Toxics Control (March 1991) (TSD);
  - Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria, October 1, 1993;
  - Whole Effluent Toxicity (WET) Control Policy, July 1994;
  - National Policy Regarding Whole Effluent Toxicity Enforcement, August 14, 1995;
  - Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods, April 10, 1996;
  - Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final, May 31, 1996;
  - Draft Whole Effluent Toxicity (WET) Implementation Strategy, February 19, 1997.

**Basis for Effluent Limitations**

***General Basis***

17. *Federal Water Pollution Control Act*. Effluent limitations and toxic effluent standards are established pursuant to sections 301 through 305, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharges herein.

***Technology Based Effluent Limits***

18. According to 40 CFR Part 125.3, technology-based limits signify the minimum level of control that a Discharger must attain for conventional pollutants. In this permit, technology-based effluent limits are the same as those prescribed in the previous permit, which included limits for biochemical oxygen demand (BOD), total suspended solids (TSS), settleable matter, oil and grease, and chlorine residual.

***Applicable Water Quality Objectives/Criteria***

19. The WQO and WQC applicable to the receiving waters for this discharge are from the Basin Plan, the CTR, and the NTR.
- a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c. below). The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part "[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on current available information.
  - b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain priority toxic pollutants. The Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
  - c. The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving waters for this Discharger.

**Basin Plan Receiving Water Salinity Policy**

20. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance. For constituents with water quality objectives specified in the Basin Plan, it is appropriate to use the Basin Plan definition for determining if the receiving water is fresh, marine, or estuarine.

**CTR Receiving Water Salinity Policy**

21. The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two

categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance. In applying CTR, criteria it is appropriate to use the CTR definition for determining if the receiving water is fresh, marine, or estuarine.

Receiving Water Salinity and Hardness

22. a. Salinity. The receiving water for the subject discharge is Carquinez Strait, which is a tidally influenced waterbody, with significant fresh water inflow during the wet weather season. Furthermore, Carquinez Strait is specifically defined as estuarine under both the Basin Plan and CTR definitions. Therefore, the effluent limitations specified in this Order for discharges to Carquinez Strait are based on the lower of the marine and freshwater Basin Plan WQOs and CTR and NTR WQC.
- b. Hardness. Some WQOs and WQC are hardness dependent. Hardness data collected through the RMP are available for water bodies in the San Francisco Bay Region. In determining the WQOs and WQC for this Order, the Board used a hardness of 46 mg/L, which is the minimum hardness value at the Pacheco Creek Station from 1993-2000. This represents the best available information for hardness of the receiving water after it has mixed with the discharge.

Water Quality-Based Effluent Limitations

23. Toxic substances are regulated by WQBELs derived from water quality objectives listed in the Basin Plan Tables 3-3 and 3-4, the NTR, USEPA recommended criteria, the CTR, the SIP, and/or BPJ. Numeric WQBELs are required for all constituents that have reasonable potential to cause or contribute to an excursion above any State WQO/WQC. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the SIP. If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. Further details about the effluent limitations are given in the associated Fact Sheet.

Receiving Water Ambient Background Data used in Calculating WQBELs

24. The receiving waters for the discharges are estuarine and subject to complex tidal and riverine currents. Therefore, the most representative location of ambient background data for this facility is the Central Bay. WQBELs were calculated using RMP data from 1993 through 2000 for the Yerba Buena and Richardson Bay RMP stations. However, not all the constituents listed in the CTR were analyzed by the RMP during this time. By letter dated August 6, 2001, the Board's Executive Officer addressed this data gap by requiring additional monitoring pursuant to section 13267 of the California Water Code.

Constituents Identified in the 303(d) List

25. On May 12, 1999, the USEPA approved a revised list of impaired waterbodies prepared by the State. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Carquinez Strait is listed as an impaired waterbody. The pollutants impairing Carquinez Strait include copper, mercury, nickel, selenium, PCBs total, dioxin and furan compounds, chlordane, DDT, dieldrin, diazinon, and dioxin-like PCBs. Carquinez Strait is also impaired by exotic species.

Dilution and Assimilative Capacity

26. Board staff evaluated the assimilative capacity of the receiving water for 303(d) listed pollutants for which the Discharger has reasonable potential in its discharge. The evaluation included a review of RMP data (local and Central Bay stations), effluent data, and WQOs/WQC. From this evaluation, it

is determined that the assimilative capacity is highly variable due to the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representative nature of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water. Pursuant to Section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on a pollutant-by-pollutant basis..."

- a. For certain bioaccumulative pollutants, based on BPJ, dilution credit is not included in calculating the final WQBELs. This determination is based on available data on concentrations of these pollutants in aquatic organisms, sediment, and the water column. The Board placed selenium, mercury, and PCBs on the CWA Section 303(d) list. The USEPA added dioxin and furan compounds, chlordane, dieldrin, and 4,4'-DDT on the CWA Section 303(d) list. Board staff determined that for bioaccumulative pollutants, the only pollutants that currently have a reasonable potential to cause or contribute to exceedances of WQOs/WQC are dieldrin and 4,4-DDE. The following suggests that there is no more assimilative capacity for these pollutants.
  - i. San Francisco Bay fish tissue data shows that pollutants on the 303(d) list, except for selenium and PAHs, exceed screening levels. The fish tissue data are contained in "Contaminant Concentrations in Fish from San Francisco Bay 1997" May 1997. Denial of dilution credits for these pollutants is further justified by fish advisories to the San Francisco Bay. The Office of Environmental Health and Hazard Assessment (OEHHA) performed a preliminary review of the data from the 1994 San Francisco Bay pilot study, "Contaminated Levels in Fish Tissue from San Francisco Bay." The results of the study showed elevated levels of chemical contaminants in the fish tissues. Based on these results, OEHHA issued an interim consumption advisory covering certain fish species from the bay in December 1994. This interim consumption advice was issued and is still in effect due to health concerns based on exposure to sport fish from the bay contaminated with mercury, PCBs, dioxins, and pesticides (e.g., DDT).
- b. For non-bioaccumulative constituents, a conservative allowance of 10:1 dilution for discharges to the Bay is necessary for protection of beneficial uses. This is based on SIP provisions in Section 1.4.2. The derivation of the dilution credit is outlined below.
  - i. A far-field background station is appropriate because the receiving waterbody (Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs.
  - ii. Due to the complex hydrology of the San Francisco Bay, a mixing zone cannot be accurately established.
  - iii. Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.
  - iv. The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, silver, nickel and lead).

The main justification for using a 10:1 dilution credit is uncertainty in accurately determining ambient background and uncertainty in accurately determining the mixing zone in a complex estuarine system with multiple wastewater discharges. The detailed rationale is described in the Fact Sheet.

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)

27. Based on the 303(d) list of pollutants impairing Carquinez Strait, the Board plans to adopt TMDLs for these pollutants no later than 2010, with the exception of dioxin and furan compounds. The Board defers development of the TMDL for dioxin and furan compounds to the USEPA. Future review of the 303(d) list for Carquinez Strait may result in revision of the schedules and/or provide schedules for other pollutants.
28. The TMDLs will establish WLAs and load allocations for point sources and non-point sources, respectively, and will result in achieving the water quality standards for the waterbody. The final effluent limitations for this Discharger will be based on WLAs that are derived from the TMDLs.

Specific Basis

Reasonable Potential Analysis

29. As specified in 40 CFR 122.44(d) (1) (i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard." Using the method prescribed in Section 1.3 of the SIP, Board staff has analyzed the effluent data to determine if the discharge has a reasonable potential to cause or contribute to an excursion above a State water quality standard ("Reasonable Potential Analysis" or "RPA"). For all parameters that have reasonable potential, numeric WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the USEPA Gold Book, the NTR, and the CTR.
30. *RPA Methodology.* The method for determining RPA involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data. The RPA for all constituents is based on zero dilution, according to section 1.3 of the SIP. There are three triggers in determining reasonable potential.
  - a. The first trigger is activated when the MEC is greater than or equal to the lowest applicable WQO/WQC, which has been adjusted for pH, hardness (assumed in this permit analysis at 46 mg/L), and translator data, if appropriate. An MEC that is greater than or equal to the (adjusted) WQO/WQC means that there is reasonable potential for that constituent to cause or contribute to an excursion above the WQO/WQC and a WQBEL is required. (Is the  $MEC \geq WQO/WQC$ ?)
  - b. The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO/WQC and the MEC is less than the adjusted WQO/WQC or the pollutant was not detected in any of the effluent samples and all of the detection levels are greater than or equal to the adjusted WQO/WQC. If B is greater than the adjusted WQO/WQC, then a WQBEL is required. (Is  $B > WQO/WQC$ ?)
  - c. The third trigger is activated after a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO/WQC. A limit is only required under certain circumstances to protect beneficial uses.
31. *Summary of RPA Data and Results.* The RPA was based on effluent monitoring data of the past five years. Based on the RPA methodology described above and in the SIP, the following constituents have been found to have reasonable potential to cause or contribute to an excursion above WQOs/WQC: copper, 4,4'-DDE, and Dieldrin. Based on the RPA, numeric WQBELs are required to be included in the permit for these constituents.
32. *RPA Determinations.* The MEC, WQOs, bases for the WQOs, background concentrations used and reasonable potential conclusions from the RPA are listed in the following table for all constituents



analyzed. Board staff determined that the remaining constituents in the CTR (Nos. 1, 3, 5a, 12, 15-126 except 109 and 111) did not trigger reasonable potential due to the small size and primarily domestic nature of the discharge. These two factors make it unlikely that this discharge would contribute a significant mass load of these pollutants to the Bay. Mass load is the primary concern because the criteria for these pollutants are primarily human health driven. The Fact Sheet contains further details on the RPA.

Constituent	WQO/ WQC ( $\mu\text{g/L}$ )	Basis <sup>1</sup>	MEC outfall 001 ( $\mu\text{g/L}$ )	Maximum Ambient Background Conc. ( $\mu\text{g/L}$ )	Reasonable Potential
Arsenic	36	BP, sw	2.4	2.46	No
Cadmium	0.62	BP, fw, H=46	0.11	0.1268	CD <sup>5</sup>
Chromium(VI)	11	BP, fw, H=46	0.5	4.4	No
Copper*	3.7	CTR, sw, T=0.83 <sup>2</sup>	9.5	2.45	Yes
Lead	1.2	BP, fw, H=46	<0.5	0.8	CD <sup>5</sup>
Mercury*	0.025	BP, fw	<0.01	0.0064	CD <sup>5</sup>
Nickel*	7.1	BP, sw	3.8	3.7	CD <sup>5</sup>
Selenium*	5.0	NTR	0.5	0.39	No
Silver	1.07	BP, fw, H=46	<0.06	0.0683	No
Zinc	54.89	BP, fw, H=46	22	4.6	CD <sup>5</sup>
Cyanide	1	CTR (#14)	<5	NA	DL <sup>4</sup>
Dieldrin*	0.00014	CTR (#111)	Not Available (NA)	0.000264	Yes <sup>3</sup>
4,4-DDE*	0.00059	CTR (#109)	NA	0.00069	Yes <sup>3</sup>
CTR #s 1, 3, 5a, 12, 15-126 except, 109 and 111	Various or NA	CTR	Non-detect, less than WQC, no WQC or NA	Less than WQC or NA	No

\* = Constituents on 303(d) list

1. RPA based on the following: Hardness (H) is based on the lowest ambient hardness, 46 in mg/L as  $\text{CaCO}_3$ ; BP = Basin Plan; CTR = California Toxics Rule; NTR=National Toxics Rule; fw = freshwater; sw = saltwater; T = translator to convert dissolved to total copper.
2. Translators are based on the CTR.
3. Dieldrin and 4,4'-DDE: RPA = Yes, based on  $B > WQO$ .
4. DL = Undetermined due to analytical detection limits greater than the water quality criterion (See Fact Sheet Table for full RPA results).
5. CD = Cannot determine due to limited data. See Finding No. 33 below.

33. *Uncertainties of RPA.* Board staff used the below analysis to determine the appropriate monitoring frequency for constituents that have WQO/WQC that are aquatic life driven. For arsenic, cadmium, chromium (VI), lead, mercury, nickel, selenium, silver, and zinc, the RPA results are based on a limited data set of two samples. This limited data set may not accurately reflect the full range of concentrations for these constituents. To determine if a larger data set might trigger reasonable potential for these constituents, Board staff determined the maximum projected concentration of each constituent in accordance with the methodology described in *Technical Support Document for Water Quality-Based Toxics Control* (Technical Support Document) published by the USEPA Publication No. 505/2-90-001 and compared it with the most stringent water quality objective. For a 99% confidence level with only two data points, the Technical Support Document (p. 53-54) indicates that

the projected MEC is determined by multiplying the actual MEC by 7.4. The results of this analysis are shown in the table below:

Constituent	Projected MEC ( $\mu\text{g/L}$ )	WQO/WQC ( $\mu\text{g/L}$ )	Projected MEC > WQO/WQC = More Data Necessary?
Arsenic	17.8	36	No = one more sample to confirm
Cadmium	0.82	0.62	Yes = quarterly monitoring
Chromium (VI)	3.7	11	No = one more sample to confirm
Lead	<3.7	1.2	Possibly = annual monitoring
Mercury	<0.074	0.025	Possibly = annual monitoring
Nickel	28.1	7.1	Yes = quarterly monitoring
Selenium	3.7	5.0	No = one more sample to confirm
Silver	<0.44	1.1	No = one more sample to confirm
Zinc	162.8	54.9	Yes = quarterly monitoring

34. *RPA Results for Impairing Pollutants.* While TMDLs and WLAs are being developed, effluent concentration limits are established in this permit for 303(d) listed pollutants that have reasonable potential to cause or contribute to an excursion above the water quality standard. In addition, mass limits are required for bioaccumulative 303(d) –listed pollutants that can be reliably detected. Constituents on the 303(d) list for which the RPA determined a need for effluent limitations are copper, 4,4'-DDE, and Dieldrin.

#### ***Specific Pollutants***

35. *Phenols.* The previous permit included a WQBEL for total phenols of 500  $\mu\text{g/L}$  for protection of the Basin Plan's narrative toxicity objective. Self-monitoring data from 2002 revealed a total phenols concentration of 8  $\mu\text{g/L}$ , which is much less than the Basin Plan discharge limit of 500  $\mu\text{g/L}$  for protecting beneficial uses. As such, there is no reasonable potential for exceedance of the narrative toxicity objective due to total phenols.
36. *PAHs.* The previous permit included a WQBEL for Polynuclear Aromatic Hydrocarbons (PAHs) of 0.31  $\mu\text{g/L}$  for protection of the Basin Plan's narrative toxicity objective. Self-monitoring data from 2002 showed that the sum of PAHs was <0.7  $\mu\text{g/L}$ . Since the detection limit for PAHs is above the water quality objective, self-monitoring data serves of limited value in determining if PAHs have the potential to exceed the limit contained in the previous permit. As mentioned in Finding No. 32, the small size and domestic nature of this discharge nearly preclude its ability to impair Carquinez Strait with pollutants that have criteria based on protecting human health. Based on this, and the fact that PAHs have not been detected in the discharge, it does not appear that the discharge has a reasonable potential to cause or contribute to an exceedance of water quality objectives for PAHs.
37. *4,4'-DDE and Dieldrin.* Board staff could not determine MECs for 4,4'-DDE and dieldrin, as the Discharger has not sampled its effluent for these constituents. Board staff conducted the RPA by comparing the WQC with RMP ambient background concentration data gathered using research-based sample collection, concentration, and analytical methods. The RPA indicates that 4,4'-DDE and dieldrin have reasonable potential, and numeric WQBELs are required. However, the lack of discharge data prohibits determination of the Discharger's ability to comply. Therefore, this Order requires the Discharger to collect one sample for these pollutants to fill this data gap. The Board deems one sample as adequate owing to the small size and domestic nature of this discharge and the fact that these pesticides are no longer used.

38. *Cyanide Water Quality Objectives/Criteria.* NTR specifies a CMC and CCC of 1 µg/L for cyanide in waters of the State defined as bays or estuaries including the San Francisco Bay upstream to and including Suisun Bay and the Sacramento San Joaquin Delta. These criteria values are below the presently achievable reporting limits for this discharge.
39. *Cyanide RPA.* It cannot be determined if cyanide has a reasonable potential to cause or contribute to an excursion above WQOs/WQC. Board staff considered self-monitoring data from 1997-2001 (maximum cyanide concentration < 5 µg/L). To determine if cyanide might be present in the discharge, this permit requires additional monitoring.
40. *Permit Reopener.* This Order includes a reopener provision to allow numeric effluent limitations to be added or deleted for any constituent that exhibits or does not exhibit, respectively, reasonable potential. The Board will make this determination based on monitoring results.

#### ***Development of Effluent Limitations***

##### ***Copper***

41. *Copper Water Quality Criteria.* The saltwater criteria for copper in the adopted CTR are 3.1 µg/L for chronic protection and 4.8 µg/L for acute protection. Included in the CTR are translator values to convert the dissolved criteria to total criteria. The Discharger may also perform a translator study to determine a more site-specific translator. The SIP, Section 1.4.1, and the June 1996 USEPA guidance document, entitled *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion*, describe this process and provide guidance on how to establish a site-specific translator. Using the CTR translator, translated criteria of 3.7 µg/L for chronic protection and 5.8 µg/L for acute protection were used to calculate effluent limitations.
42. *Copper Effluent Limitations.* As described in an earlier finding, there is reasonable potential for exceedances of the WQC for copper in the subject discharge and a limit is necessary. Based on the factors below, this Order establishes an interim limit for copper from the previous permit.
  - a. The calculated WQBELs presented in the Fact Sheet as a point of reference (AMEL of 12.2 µg/L and MDEL of 24.6 µg/L) are above the maximum copper concentration of 9.5 µg/L, but the Discharger has collected only two effluent copper samples in the last five years. One effluent sample from January 1993 showed copper at 16.9 µg/L, which is above the AMEL. But, this datum may not be representative of current conditions. To confirm if it is infeasible for a discharger to meet final effluent limits, State Board Order No. 2002-12 directs the Board to use a statistical approach. However, in this case, sufficient data are not available. As such, this Order carries over the previous Order's limit and requires the Discharger to implement monthly monitoring for one year and quarterly thereafter. This will provide sufficient data for the Board to determine if the Discharger can immediately comply with final copper limits. Once sufficient copper data are available, the Board will re-open the permit to specify compliance with final copper limits immediately or in accordance with an appropriate time schedule.
  - b. The final WQBEL for copper may also be based on the WLA contained in a TMDL. Alternatively, the copper WQBEL may be developed consistent with SIP procedures in Section 5.2 if the impairment studies support adoption of a SSO. If the 303(d) listing process in 2002 concludes that Suisun Bay is not impaired by copper, then a de-listing of the Bay for copper will result.

##### ***Whole Effluent Acute Toxicity***

43. This Order includes effluent limits for whole effluent acute toxicity. Compliance evaluation is based on 96-hour static bioassays. USEPA promulgated updated test methods for acute and chronic toxicity

bioassays on October 16, 1995, in 40 CFR Part 136. Dischargers have identified several practical and technical issues that need to be resolved before implementing the new procedures, referred to as the 4th Edition. The primary unresolved issue is the use of younger, possibly more sensitive fish, which may necessitate a reevaluation of permit limits. SWRCB staff recommended to the Boards that new or renewed permit holders be allowed a time period in which laboratories can become proficient in conducting the new tests. A provision is included in this Order granting the Discharger 12 months to implement the new test method. In the interim, the Discharger may continue using the current test protocols. The previous Order included acute toxicity testing requirements and limits. These limits remained unchanged in this Order. The Discharger's application indicates that from 1998-2002 survival rates ranged from 90-100 percent, which complies with effluent limitations.

#### **Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy**

44. On August 6, 2001, the Board sent a letter to all the permitted dischargers pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. This formal request for technical information addresses the insufficient effluent and ambient background data, and the dioxin study. The letter (described above) is referenced throughout the permit as the "August 6, 2001 Letter".
45. Pursuant to the August 6, 2001 Letter from Board Staff, the Discharger is required to submit workplans and sampling results for characterizing the levels of selected constituents in the effluent and ambient receiving water. The Discharger submitted a work plan, which the Executive Officer conditionally approved by letter dated June 28, 2002.
46. *Monitoring Requirements (Self-Monitoring Program).* The SMP includes monitoring at the outfalls for conventional, non-conventional, toxic pollutants, and acute toxicity. As a result of the data review performed for this permit reissuance, this Order requires monthly monitoring for copper for one year and quarterly thereafter; quarterly monitoring for cadmium, nickel, and zinc; annual monitoring for lead, mercury, and cyanide; and once every five years for arsenic, hexavalent chromium, selenium, silver, dieldrin, and 4,4'-DDE. With respect to effluent monitoring, the monitoring and reporting requirements of this Order supercede the requirement of the Executive Officer's August 6, 2001 letter. In lieu of near field discharge specific ambient monitoring, it is acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the August 6, 2001 letter, and the RMP.

#### **Other Discharge Characteristics and Permit Conditions**

47. *NPDES Permit.* This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.
48. *Notification.* The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharges and have been provided an opportunity to submit their written views and recommendations. Board staff prepared a Fact Sheet and Response to Comments, which are hereby incorporated by reference as part of this Order.
49. *Public Hearing.* The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED**, pursuant to the provisions of Division 7 of the California Water Code, regulations, and plans and policies adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

#### A. DISCHARGE PROHIBITIONS

1. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
2. Until Provision E.2 is satisfied, the discharge of average dry weather flows greater than 0.025 mgd, is prohibited. Once the Discharger satisfies Provision E.2, the discharge of average dry weather flows greater than 0.033 mgd, is prohibited. The average dry weather flow shall be determined over three consecutive dry weather months each year.
3. Discharge of treated wastewater at any point where it does not receive an initial dilution of at least 10:1 is prohibited.
4. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the treatment plant or from the collection system is prohibited.

#### B. EFFLUENT LIMITATIONS

1. Effluent discharged into Carquinez Strait shall not exceed the following:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Instantaneous Maximum</u>	<u>Daily Maximum</u>
BOD <sub>5</sub>	mg/L	30	45		
TSS	mg/L	30	45		
Oil and Grease	mg/L	10			20
Settleable Matter	mL/L-hr	0.1		0.2	
Chlorine Residual <sup>1</sup>	mg/L			0.0	

<sup>1</sup> The chlorine residual requirement is defined as below the limit of detection in standard methods defined in *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfate dosage (which could be interpolated), and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limit.

2. The pH of the discharge shall not exceed 9.0 nor be less than 6.0.
3. Total Coliform Bacteria: The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following bacteriological limits: The moving median value of most probable number (MPN) of total coliform bacteria in any five (5) consecutive samples shall not exceed 240 MPN/100 mL; and, any single sample shall not exceed 10,000 MPN/100 mL.
4. 85 Percent Removal, BOD<sub>5</sub> and TSS: The arithmetic mean of the biochemical oxygen demand and total suspended solids values for effluent samples collected each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times during the same period.

5. Whole Effluent Acute Toxicity: Representative samples of the effluent shall meet the following limits for acute toxicity. Compliance with these limits shall be achieved in accordance with Provision E.4 of this Order:

- a. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be:
  - (1) A three (3)-sample median value of not less than 90 percent survival; and
  - (2) A single (1) value of not less than 70 percent survival.
- b. These acute toxicity limits are further defined as follows:
  - (1) **3-sample median limit:** Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if one of the past two or fewer bioassay tests also show less than 90 percent survival.
  - (2) **1-sample limit:** A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit.

6. **Toxic Substances:** The discharge of effluent shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Daily Max</u>	<u>Monthly Average</u>	<u>Interim Daily Max</u>	<u>Notes</u>
Copper	µg/L			37	(1)

- (1) Copper: This interim limit shall remain in effect until **February 1, 2008**, or until the Board amends the limit based on the Discharger's performance, site-specific objectives, or the Waste Load Allocations in the TMDLs.

## C. RECEIVING WATER LIMITATIONS

1. The discharges shall not cause the following conditions to exist in waters of the State at any place:
  - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
  - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
  - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
  - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
  - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharges shall not cause nuisance, or adversely affect the beneficial uses of the receiving water.
3. The discharges shall not cause the following limits to be violated in waters of the State at any one place within one foot of the water surface:

- a. Dissolved Oxygen: 7.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharges shall not cause further reduction in ambient dissolved oxygen concentrations.

- b. Dissolved Sulfide: 0.1 mg/L, maximum

- c. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH by more than 0.5 pH units.

- d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and  
0.16 mg/L as N, maximum.

- e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

4. The discharges shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

#### **D. SLUDGE MANAGEMENT PRACTICES**

1. Sludge shall be removed from the septic tank, as needed to ensure optimal plant operation.
2. Treatment and storage of sludge generated at the WWTP shall be confined to the respective WWTP property and conducted in a manner that precludes nuisance conditions (e.g., vectors and objectionable odors), infiltration of waste constituents into soils, and the potential for sludge to be carried and deposited into a water of the State.
3. Residual sludge shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, WWTP, composting sites, soil amendment sites) operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy this specification.
4. Use and disposal of sludge should comply with the self-implementing federal regulations of Title 40, Code of Federal Regulations (CFR), Part 503, which are subject to enforcement by the USEPA, not the Board. If during the life of this Order the State accepts primary primacy for implementation of 40 CFR 503, the Board may also initiate enforcement where appropriate.
5. Permanent onsite sludge storage or disposal activities are not authorized by this permit. A ROWD shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.

## **E. PROVISIONS**

### **1. Permit Compliance and Rescission of Previous Waste Discharge Requirements**

The Discharger shall comply with all sections of this Order beginning on **February 1, 2003**.

Requirements prescribed by this Order supersede the requirements prescribed by Order No. 95-127.

### **2. Repair and Renewal of Sand Filter Beds**

In order to restore the full permitted discharge capacity, **within six months of Order adoption**, the Discharger shall submit a technical report that proposes how it will evaluate and replace, if necessary, the sand media on all of its filter beds and the concrete base on the sand filter bed that currently leaks. The technical report shall include a time schedule for evaluating and implementing identified tasks. Following written approval of the technical report from the Executive Officer, this provision shall be considered satisfied.

### **3. Receiving Water Monitoring**

The Discharger shall collect or participate in collecting background ambient receiving water monitoring for priority pollutants that is required to perform RPAs and calculate effluent limitations. To fulfill this requirement, the Discharger shall submit data sufficient to characterize the concentration of each toxic pollutant listed in the CTR in the ambient receiving water that will provide dilution for the discharge. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the receiving water at a point after the discharge has mixed with the receiving waters.

The BACWA, on behalf of the Discharger and other dischargers, submitted a sampling plan dated September 28, 2001, for a collaborative group monitoring program. The Executive Officer conditionally approved this plan in November 2001.

Interim and Final Reports: The Discharger shall submit an interim report on May 18, 2003. The report shall summarize the data collected to date, and describe future monitoring to take place. The Discharger shall submit a final report that presents all the data to the Board 180 days prior to permit expiration. This final report shall be submitted with the application for permit reissuance.

## **Toxicity Requirements**

### **4. Whole Effluent Acute Toxicity**

Compliance with acute toxicity requirements of this Order shall be achieved in accordance with the following:

#### **a. From permit adoption date to March 31, 2004:**

- (1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour static renewal bioassays.
- (2) Test organisms shall be rainbow trout or three-spined sticklebacks unless specified otherwise in writing by the Executive Officer.
- (3) All bioassays may be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 3<sup>rd</sup> Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

#### **b. From April 1, 2004 on:**



- (1) Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour flow through bioassays, or static renewal bioassays. If the Discharger will continue to use 3<sup>rd</sup> Edition Methods, it must submit a technical report by November 1, 2003, identifying the reasons why the approved USEPA protocol (4<sup>th</sup> edition) is not feasible.
- (2) Test organisms shall be rainbow trout or fathead minnow unless specified otherwise in writing by the Executive Officer.
- (3) All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 4<sup>th</sup> Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

**5. Operations and Maintenance Manual**

The Discharger shall review, and update as necessary, its Operations and Maintenance Manual annually or within 90 days of completion of any significant facility or process changes. The Discharger shall submit to the Board, by April 30 of each year, a letter describing the results of the review process including an estimated time schedule for completion of any revisions determined necessary, and a description or copy of any completed revisions.

**6. Contingency Plan Update**

- a. The Discharger shall maintain a Contingency Plan as required by Board Resolution 74-10, and as prudent in accordance with current industrial facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
- b. The Discharger shall regularly review, and update as necessary, the Contingency Plan in order for the plan to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- c. By June 30 of each year, the Discharger shall submit to the Board a report describing the current status of its Contingency Plan review and update. This report shall include a description or copy of any completed revisions, or a statement that no changes are needed.

**7. Self-Monitoring Program**

The Discharger shall comply with the Self-Monitoring Program (SMP) for this Order as adopted by the Board. The SMP may be amended by the Executive Officer pursuant to USEPA regulations 40 CFR 122.62, 122.63, and 124.5.

**8. Standard Provisions and Reporting Requirements**

The Discharger shall comply with all applicable items of the Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (attached), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in 'Standard Provisions', the specifications of this Order shall apply.

**9. Change in Control or Ownership**

- a. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board.

- b. To assume responsibility of and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions & Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

**10. Permit Reopener**

The Board may modify or reopen this Order and Permit prior to its expiration date in any of the following circumstances:

- (1) If present or future investigations demonstrate that the discharge(s) governed by this Order and Permit will or have a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters;
- (2) New or revised WQOs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this permit will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order and Permit are not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under Federal regulations governing NPDES permit modifications;
- (3) If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified. The Discharger may request permit modification on this basis. The Discharger shall include in any such request an antidegradation and antibacksliding analysis.

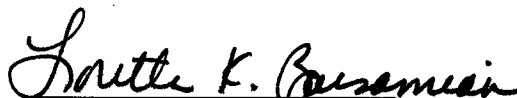
**11. NPDES Permit**

This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on **February 1, 2003**, provided the USEPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

**12. Order Expiration and Reapplication**

- a. This Order expires on **December 31, 2007**.
- b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements. The application shall be accompanied by a summary of conventional pollutant data from the most recent 3 years, and of toxic pollutant data from the most recent 5 years.

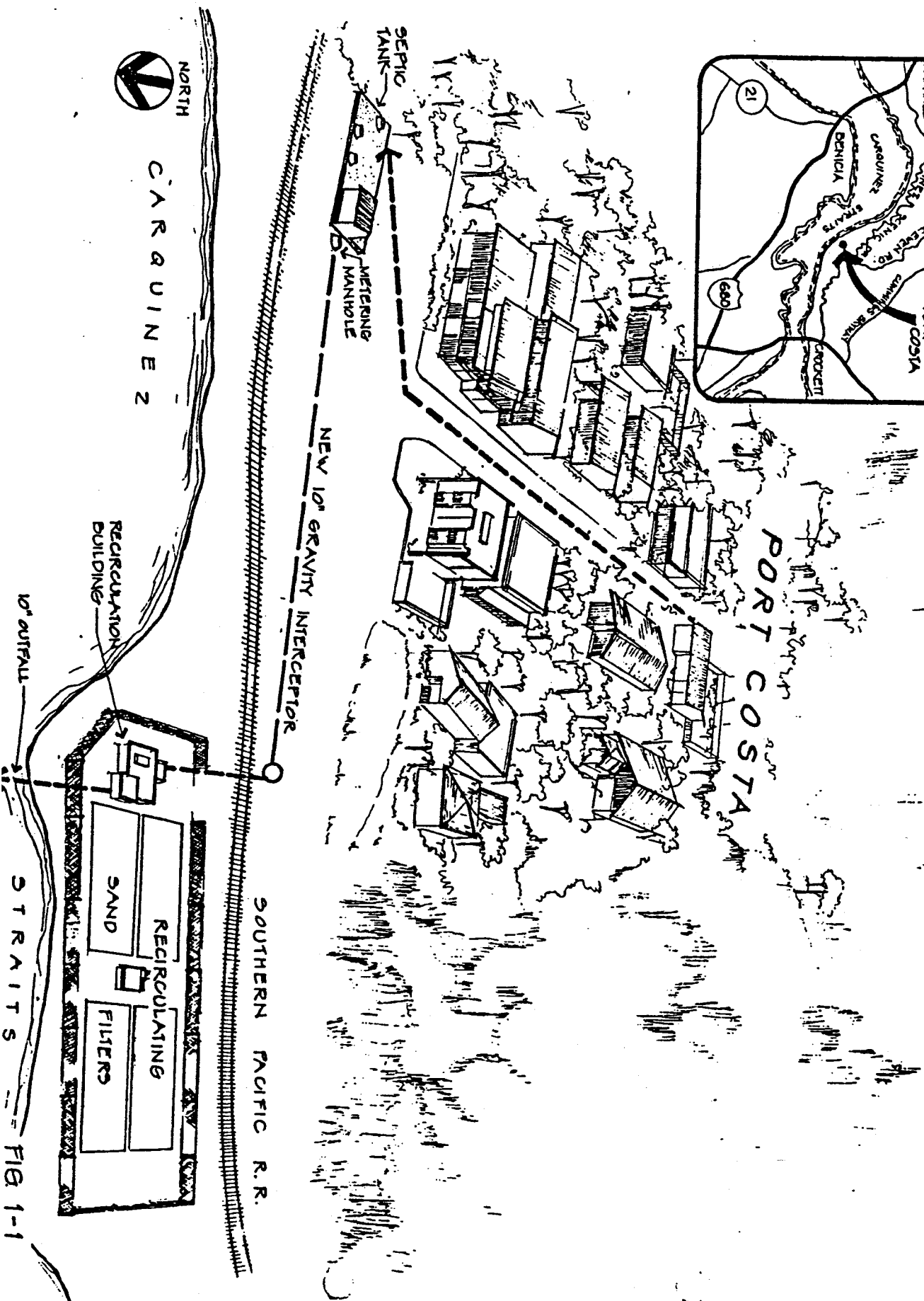
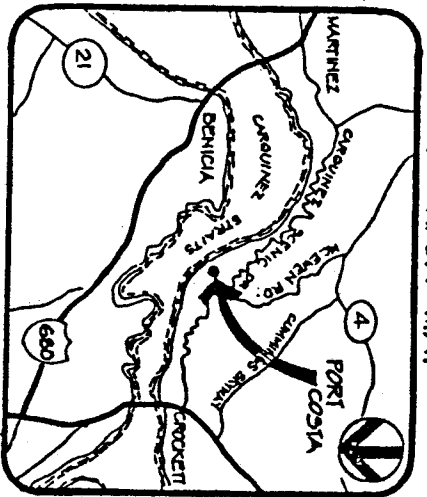
I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on January 22, 2003.

  
LORETTA K. BARSAMIAN  
Executive Officer

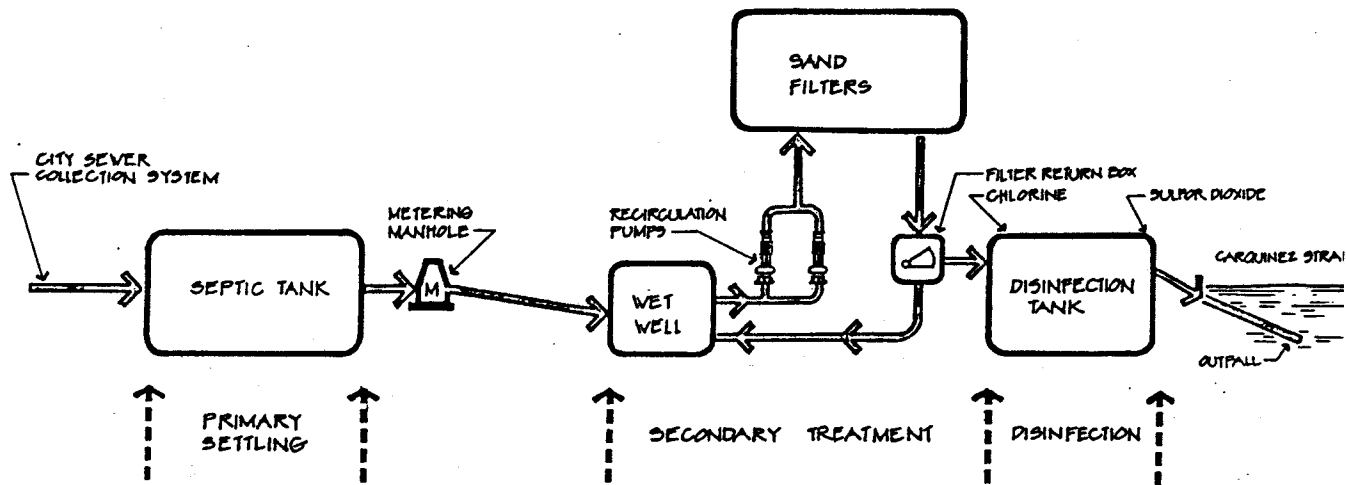
**Attachments:**

- A. Discharge Facility Location Map
- B. Discharge Facility Treatment Process Diagram
- C. Self-Monitoring Program, Part B
- D. Fact Sheet
- E. Self-Monitoring Program, Part A
- F. Standard Provisions and Reporting Requirements, August 1993
- G. Board Resolution No. 74-10

# Attachment A Contra Costa Sanitation District No. 5 Discharge Facility Location Map



Attachment B  
Contra Costa Sanitation District No. 5  
Discharge Facility Treatment Process Diagram



FORT COSTA WASTEWATER TREATMENT PROCESS

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**SELF-MONITORING PROGRAM**

**FOR**

**CONTRA COSTA COUNTY SANITATION DISTRICT NO. 5  
PORT COSTA, CONTRA COSTA COUNTY**

**NPDES PERMIT NO. CA0037885**

**ORDER NO. R-2-2003-0009**

**Consists of:**

**Part A (not attached)  
Adopted August 1993**

**and**

**Part B (Attached)  
Adopted: January 22, 2003**

*Note: Part A (dated August 1993, Standard Provisions and Reporting Requirements for NPDES Surface Water Discharger Permits (dated August 1993), and Resolution No. 74-10 referenced in this Self Monitoring Program are not attached but are available for review or download on the Board's website at [www.swrcb.ca.gov/rwqcb2](http://www.swrcb.ca.gov/rwqcb2).*

## SELF-MONITORING PROGRAM – Part B

### I. Description of Sampling and Observation Stations

<u>Station</u>	<u>Description</u>
A. INFLUENT	
A-001	At any point in the treatment facilities headworks at which all waste tributary to the system is present and preceding any phase of treatment, and exclusive of any return flows or process side-streams.
B. EFFLUENT	
E-001	At a point in the outfall from the treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present (may be the same as E-001-D).
E-001-D	At any point in the disinfection facilities for Waste E-001 at which adequate contact with the disinfectant is assured.
C. RECEIVING WATERS	
C-1	At a point in Carquinez Strait, located in the vicinity of the outfall discharge point, and accessible from the shoreline.
C-2	At a point in Carquinez Strait, located approximately 50 feet down current from the point of discharge, and accessible from the shoreline.
C-3	At a point in Carquinez Strait, located approximately 1,000 feet up current from the point of discharge, and accessible from the shoreline.
D. LAND OBSERVATIONS	
P-1 through P-‘n’	Located at the corners and midpoints of the perimeter fence line surrounding the treatment facilities. (A sketch showing the locations of these stations shall accompany each report).
E. OVERFLOWS AND BYPASSES	
O-1 through O-‘n’	At points in the collection system including manholes, pump stations, or any other location where overflows or bypasses occur.
NOTES :	A map and description of each known overflow or bypass location shall accompany the self monitoring report for each month.

## **II. Schedule of Sampling, Measurements, and Analysis**

- A. The schedule of sampling, measurements, and analysis shall be that given in Table I (attached).
- B. Due to subsurface hazards in the receiving waters, receiving water samples may be taken from the shoreline using a 'pole-and-bucket' or by a similar technique.

## **III. Reporting Requirements**

- A. General Reporting Requirements are described in Section E of the Board's *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*, dated August 1993.
- B. Self-monitoring reports for each calendar month shall be submitted monthly, by the 30<sup>th</sup> day of the following month. The required contents of these reports are described in Section F.4. of Part A.
- C. An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Board by March 1 of each year. The required contents of the Annual Report are described in Section F.5 of Part A.
- D. Any overflow, bypass, or any significant noncompliance incident that may endanger health or the environment shall be reported in accordance with Sections F.1 and F.2 of Part A. The date, time, duration, location, estimated volume of wastewater discharged, and corrective actions taken for these events shall be reported in monthly self-monitoring reports.
- E. Any removal of septage from the septic tank and other maintenance activities shall be reported in monthly self-monitoring reports. The location of septage disposal shall be identified.

## **IV. Modifications to Part A**

- A. Exemptions from Part A: Self-Monitoring Report  
This monitoring program does include the following sections of Part A: C.2d; C.2.f; C.4; C.5; D.4, and E.3.
- B. Modification to section F.1 of Part A: Self-Monitoring Report
  - 1. The second sentence of section F.1 shall be modified as follows: "Spills shall be reported immediately after the occurrence to the Regional Board at 510-622-2300 on weekdays during 8 a.m. to 5 p.m., and to the Office of Emergency Services at 1-800-852-7550 on weekends or when the spill occurred outside these hours."
  - 2. Section F.1.b is revised to read: "Best estimate of volume involved..."
  - 3. Section F.1.d is revised to read: "Cause of spill or overflow..."
  - 4. Section F.1.i is revised to read: "Agencies or persons notified...."

C. Modification to section F.4 of Part A: Self-Monitoring Report:

*Monthly self-monitoring report:* The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices. For each calendar month, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the following:

1. The report shall be submitted to the Board no later than 30 days from the last day of the reporting month.
2. *Letter of Transmittal:* Each report shall be submitted with a letter of transmittal. This letter shall include the following:
  - a. Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
  - b. Details of the violations: parameters, magnitude, test results, frequency, and dates;
  - c. The cause of the violations;
  - d. Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory;
  - e. Signature: The letter of transmittal shall be signed by the Discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. *Compliance Evaluation Summary:* Each report shall include a compliance evaluation summary. This summary shall include, for each parameter for which effluent limits are specified in the Permit, the number of samples taken during the monitoring period, and the number of samples in violation of applicable effluent limits.
4. *Results of Analyses and Observations.*
  - a. Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result;
  - b. If any parameter specified in Table 1 of Part B is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period;
  - c. Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.
5. *Effluent Data Summary – USEPA NPDES Discharge Monitoring Reports:* Summary tabulations of monitoring data including maximum, minimum and average values for subject monitoring period shall be reported in accordance with the format given by the



USEPA NPDES Discharge Report(s) (DMRs; USEPA Form 3320-1 or successor). Copies of these DMRs shall be provided to USEPA as required by USEPA.

6. *Data Reporting for Results Not Yet Available:* The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in timely manner. The Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subject monitoring period, such cases shall be described in the SMR. Data for these parameters, and relevant discussions of any observed violations, shall be included in the next following SMR after the data become available.
7. *Report Submittal:* The Discharger shall submit SMRs to:  
Executive Officer  
San Francisco Bay Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612  
Attn: NPDES Division

D. Modification to section F.5 of Part A: Annual Report:

An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Board by March 1 of the following year. This report shall include the following:

1. Both tabular and graphical summaries of monitoring data collected during the calendar year that characterizes treatment plant performance and compliance with waste discharge requirements.
2. A comprehensive discussion of treatment plant performance and compliance with waste discharge requirements. This discussion should include any corrective actions taken or planned such as changes to facility equipment or operation practices which may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment or disposal practices.

E. Additions to Part A of Self-Modification Program:

1. Reporting Data in Electronic Format:

The Discharger has the option to submit all monitoring results in electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit the SMRs electronically, the following shall apply:

- a. *Reporting Method:* The Discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS).
- b. *Modification of reporting requirements:* Reporting requirements F.4 in the attached *Self-Monitoring program, Part A*, dated August 1993, shall be modified as follows. In the future, the Board intends to modify Part A to reflect these changes.

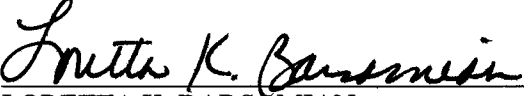
- c. Monthly Report Requirements: For each calendar month, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the following:
  - i. The report shall be submitted to the Board no later than 30 days from the last day of the reporting month.
  - ii. Letter of Transmittal: Each report shall be submitted with a letter of transmittal. This letter shall include the following:
    - (i) Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
    - (ii) Details of the violations: parameters, magnitude, test results, frequency, and dates;
    - (iii) The cause of the violations;
    - (iv) Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory.
    - (v) Signature: The letter of transmittal shall be signed by the Discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."
    - (vi) Compliance Evaluation Summary: Each report shall include a compliance evaluation summary. This summary shall include the number of samples in violation of applicable effluent limits.
    - (vii) Results of Analyses and Observations.
    - (viii) Tabulations of all required analyses and observations, including parameter, sample date, sample station, and test result.
    - (ix) If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.
    - (x) Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.
- d. Data Reporting for Results Not Yet Available: The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. The Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subjected monitoring period, such cases shall be described in the SMR. Data for these parameters, and relevant discussions of any observed violations, shall be included in the next following SMR after the data become available.

**V. Self-Monitoring Program Certification**

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R-2-2003-0009.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective as of February 1, 2003.

  
LORETTA K. BARSAMIAN  
Executive Officer

Attachment: Table I – Schedule for Sampling, Measurements, and Analyses

**TABLE 1**  
**SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSES [1]**

Sampling Station	A-001		E-001		E-001-D	O	P	C
Type of Sample	G	Co	G	Co	G	Ob	Ob	Ob
Parameter (units) [notes]								
Flow rate (mgd) [2]				3/W				
BOD <sub>5</sub> (mg/L & kg/d) [9]	M		M					
Chlorine residual (mg/L) [3]					3/W			
Settleable matter (mL/L-hr)			M					
TSS (mg/L & kg/d) [9]	W		W					
Oil and Grease (mg/L) [4, 9]			M					
Total Coliform (MPN/100 mL)					W			
Acute Toxicity (% Surv) [5]					Q			
Ammonia Nitrogen (mg/L & kg/d) [6]					Q			
pH			3/W					
Dissolved Oxygen (mg/L & % Sat)								
Temperature (°C)								
Color (color units)								
Arsenic (µg/L) [7]			1/5Y					
Cadmium (µg/L) [7]			Q					
Chromium IV (µg/L) [7]			1/5Y					
Copper (µg/L) [7]			M/Q					
Cyanide (µg/L) [7]			Y					
Lead (µg/L) [7]			Y					
Mercury (µg/L) [7]			Y					
Nickel (µg/L) [7]			Q					
Selenium (µg/L) [7]			1/5Y					
Silver (µg/L) [7]			1/5Y					
Zinc (µg/L) [7]			Q					
Standard Observations [8]						E	W	Q
Dieldrin			1/5Y					
4,4'-DDE			1/5Y					

**LEGEND FOR TABLE 1**

Type of Stations:

- A = treatment facility influent
- E = treatment facility effluent
- O = overflow and bypass points
- P = treatment facility perimeter
- C = receiving water

Frequency of Sampling:

- 3/W = three times each week (on separate days)
- W = once each week
- M = once each month
- M/Q = monthly for one year and quarterly thereafter
- Y = once each year
- Q = once each calendar quarter (at least two month intervals)
- E = each occurrence
- 1/5Y = once every five years within 6 months before the due date for the application for permit reissuance

Types of Samples:

- Co = continuous sampling
- G = grab sample
- Ob = observation

**FOOTNOTES FOR TABLE 1**

- [1] Bypass Monitoring: During any time when bypassing occurs from any treatment process (primary, secondary, chlorination, dechlorination, etc.) in the treatment facilities, the self-monitoring program shall include the following sampling and analyses in addition to the Table I schedule:
- a. When bypassing occurs from any primary or secondary treatment unit(s), grab samples on a hourly basis for the duration of the bypass event for BOD and TSS analyses, grab samples at least daily for settleable matter and oil and grease analyses; and continuous monitoring of flow.
  - b. When bypassing the chlorination process, grab samples at least daily for total coliform analyses; and continuous monitoring of flow.
  - c. When bypassing the dechlorination process, grab samples hourly for chlorine residual; and continuous monitoring of flow.
- [2] Flow Monitoring: Flows shall be measured continuously and recorded at least three times a week. The following information shall also be reported monthly:
- Average Daily Flow      (mgd)
- [3] Chlorine Residual: Chlorine residual concentrations shall be monitored both prior to and following dechlorination.
- [4] Oil & Grease Monitoring:  
Each Oil & Grease sample event shall consist of one grab sample.
- [5] Fish Toxicity shall be determined using parallel, 96-hour, static-renewal bioassays using grab samples representative of the discharged effluent. The test specie shall be either fathead minnow, rainbow trout or three-spined stickleback. Effluent used for fish bioassays must be undiluted, disinfected, dechlorinated effluent.
- The bioassay water shall be tested for pH, dissolved oxygen, and temperature at the start of the bioassay, and then daily for the duration of the bioassay test (i.e., at 0, 24, 48, 72, and 96 hours from the start of the bioassay test).
- [6] Ammonia Nitrogen shall be tested on the day the bioassay is collected.
- [7] If any of these constituents are found in excess of the permit limits, then sampling and analysis for the constituents which exceed the permit limits shall be conducted weekly until compliance is demonstrated in two successive samples. After one year of monitoring, the Discharger may request that the Board consider additional data to determine if a larger data set would affect the monitoring frequency set forth in this Order.
- [8] Receiving water observations shall include only those contained in Items E.1.a, E.1.b, E.1.c, and E.3 of Part A (August 1993) of the Self-Monitoring Program. Perimeter observations shall include only E.5.a (odors) of Part A of the same program.
- [9] In the event that sampling once every month shows an apparent violation of the waste discharge permit monthly average limitation (considering the result of one day's sampling as a monthly average), then the sampling frequency shall be increased to weekly, so that a true monthly average can be computed and compliance can be determined.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION  
1515 CLAY STREET, SUITE 1400  
OAKLAND, CA 94612  
(510) 622 - 2300 Fax: (510) 622 - 2460

## **FACT SHEET**

for

NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for  
**CONTRA COSTA COUNTY SANITATION DISTRICT NO. 5**  
PORT COSTA, CONTRA COSTA COUNTY  
**NPDES Permit No. CA0037885**  
**ORDER NO. R2-2003-0009**

### **PUBLIC NOTICE:**

#### **Written Comments**

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments must be submitted to the Regional Board no later than 5:00 p.m. on **December 18, 2002**.
- Send comments to the Attention of Robert Schlipf.

#### **Public Hearing**

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1<sup>st</sup> floor Auditorium.
- This meeting will be held on: **January 22, 2003**, starting at 9:00 am.

#### **Additional Information**

- For additional information about this matter, interested persons should contact Regional Board staff member: Mr. Robert Schlipf, Phone: (510) 622-2478; email: rs@rb2.swrcb.ca.gov

This Fact Sheet contains information regarding an application for waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for Contra Costa County Sanitation District No. 5 (Discharger) for domestic and to a lesser extent commercial wastewater discharges. The Fact Sheet describes the factual, legal, and methodological basis for the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the limits.

## **I. INTRODUCTION**

The Discharger applied to the Board for reissuance of waste discharge requirements and a permit to discharge municipal wastewater to waters of the State and the United States under the NPDES. The application and Report of Waste Discharge is dated June 21, 2002, and was amended on July 18, 2002.

The Discharger operates a municipal wastewater treatment plant (WWTP) that serves the community of Port Costa, which has a population of about 350 people. The Plant provides secondary treatment of domestic wastewater and to a lesser extent commercial wastewater. Currently, the Discharger treats about 0.006 million gallons per day (mgd) of wastewater, which is well below the WWTP's dry weather design capacity of 0.033 mgd. The USEPA and the Board have classified this Discharger as

a minor discharger. The receiving waters for the subject discharges are the waters of Carquinez Strait. Beneficial uses for Carquinez Strait, as identified in the Basin Plan and based on known uses of the receiving waters near the discharge, are:

- a. Industrial Service Supply
- b. Navigation
- c. Water Contact Recreation
- d. Non-contact Water Recreation
- e. Commercial and Sport Fishing
- f. Wildlife Habitat
- g. Preservation of Rare and Endangered Species
- h. Fish Migration
- i. Fish Spawning
- j. Estuarine Habitat

Carquinez Strait is a tidally influenced water body with significant fresh water inflows during the wet weather season. Based on Regional Monitoring Program data, Carquinez Strait meets the definition of estuarine under the definitions included in the California Toxics Rule (CTR) and the Basin Plan. Therefore, the effluent limitations specified in this Order for discharges to Carquinez Strait are based on the lower of the marine and freshwater Basin Plan WQOs and CTR and NTR WQC.

## II. DESCRIPTION OF EFFLUENT

The table below presents the quality of the discharge, as indicated in the Discharger's application for permit reissuance. To calculate the average value for constituents with both actual and nondetect values, the Discharger indicates that it used  $\frac{1}{2}$  of the method detection limit.

**Table A. Summary of Discharge Data**

Parameter	Average	Daily Maximum
pH, standard units	--	7.4
BOD <sub>5</sub> , mg/L	2.8	10.0
TSS, mg/L	2.3	3.0
Total Coliform Bacteria (MPN/100 mL) <sup>1</sup>	<2	<2
Arsenic, µg/L	1.85	2.4
Cadmium, µg/L	0.105	0.11
Chromium, µg/L	0.3	0.5
Copper, µg/L	8.25	9.5
Lead, µg/L	<0.5	<0.5
Mercury, µg/L	<0.01	<0.01
Nickel, µg/L	3.4	3.8
Selenium, µg/L	0.3	0.5
Silver, µg/L	<0.06	<0.06
Zinc, µg/L	20	22

<sup>1</sup> From January through September 2001, the Discharger often reported total coliform levels at or above 16,000 MPN/100 mL. In characterizing effluent quality, the Discharger did not include these values, as it believed they were a result of improper procedures followed by treatment plant staff and were not indicative of current treatment plant performance. Board staff is undertaking an investigation to determine the validity of the Discharger's claims.

### III. GENERAL RATIONALE

The following documents are the bases for the requirements contained in the proposed Order, and are referred to under the specific rationale section of this Fact Sheet.

- Federal Water Pollution Control Act, as amended (hereinafter the **CWA**).
- Federal Code of Regulations, Title 40 - Protection of Environment, Chapter 1, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-129 (hereinafter referred to as 40 CFR specific part number).
- Water Quality Control Plan, San Francisco Bay Basin, adopted by the Board on June 21, 1995 (hereinafter the **Basin Plan**). The California State Water Resources Control Board (hereinafter the **State Board**) approved the Basin Plan on July 20, 1995 and by California State Office of Administrative Law approved it on November 13, 1995. The Basin Plan defines beneficial uses and contains WQOs for waters of the State, including Suisun Bay.
- California Toxics Rules, Federal Register, Vol. 65, No. 97, May 18, 2000 (hereinafter the **CTR**).
- National Toxics Rules 57 FR 60848, December 22, 1992, as amended (hereinafter the **NTR**).
- State Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, May 1, 2000 (hereinafter the **State Implementation Policy**, or **SIP**).
- Ambient Water Quality Criteria for Bacteria - 1986, USEPA 440/5-84-002, January 1986.
- USEPA Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001, March 1991 (hereinafter **TSD**).

### IV. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the proposed Order are discussed as follows:

#### 1. Recent Plant Performance

Section 402(o) of CWA and 40 CFR § 122.44(l) require that water quality-based effluent limits (**WQBELs**) in re-issued permits be at least as stringent as in the previous permit. The **SIP** specifies that interim effluent limitations, if required, must be based on current treatment facility performance or on existing permit limitations whichever is more stringent. In determining what constitutes "recent plant performance", best professional judgment (**BPJ**) was used. Effluent monitoring data collected from 1997 to 2001 are considered representative of recent plant performance. These data specifically account for flow variation due to wet and dry years.

#### 2. Impaired Water Bodies in 303(d) List

The USEPA Region 9 office approved the State's 303(d) list of impaired waterbodies on May 12, 1999. The list was prepared in accordance with section 303(d) of the CWA to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-



based effluent limitations on point sources. Carquinez Strait is listed for copper, mercury, nickel, selenium, dioxins and furans, chlordane, DDT, diazinon, dieldrin, and PCBs.

The SIP requires final effluent limits for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDLs) and wasteload allocation (WLA) results. The SIP and federal regulations also require that final concentration limits be included for all pollutants with reasonable potential. The SIP requires that where the Discharger has demonstrated infeasibility to meet the final limits, interim concentration limits, and performance-based mass limits for bioaccumulative pollutants, be established in the permit with a compliance schedule in effect until final effluent limits are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control.

### 3. Basis for Prohibitions

- a) Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the Basin Plan, previous Order, and BPJ.
- b) Prohibition A.2 (flow limit): This prohibition is based on the reliable treatment capacity of the plant. Exceedence of the treatment plant's average dry weather flow design capacity may result in lowering the reliability of compliance with water quality requirements, unless the Discharger demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR 122.41(l).
- c) Prohibition A.3 (10:1 dilution): This prohibition is based on the Basin Plan. The Basin Plan prohibits discharges not receiving a minimum dilution of 10:1 (Chapter 4, Discharge Prohibition No. 1).
- d) Prohibition A.4 (no bypass or overflow): This prohibition is based on the previous Order and BPJ.

### 4. Basis for Effluent Limitations

- a) Effluent Limitations B.1: These limits are technology-based limits representative of, and intended to ensure, adequate and reliable secondary level wastewater treatment. These limits are based on the Basin Plan (Chapter 4, pg 4-8, and Table 4-2, at pg 4-69).
- b) Effluent Limitation B.2 (pH): This effluent limit is a standard secondary treatment requirement and is unchanged from the existing permit. The limit is based on the Basin Plan (Chapter 4, Table 4-2), which is derived from federal requirements (40 CFR 133.102). This is an existing permit effluent limitation and compliance has been demonstrated by existing plant performance.
- c) Effluent Limitation B.3 (Total Coliform): The purpose of this effluent limitation is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. Effluent limits are based on water quality objectives for bacteriological parameters for receiving water beneficial uses. Water quality objectives are given in terms of parameters, which serve as surrogates for pathogenic organisms. The traditional parameter for this purpose is coliform bacteria, either as total coliform or as fecal coliform. The Basin Plan's Table 4-2 (pg. 4-69) and its footnotes allow fecal coliform limitations to be substituted for total coliform limitations provided that the Discharger conclusively demonstrates "through a program approved by the Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses

of the receiving waters". Until the Discharger undertakes a bacteriological study to conclusively demonstrate that substitution of fecal coliform for total coliform limits would be protective of the beneficial uses of the receiving water, the coliform effluent limitation will continue to be expressed as total coliform. Total coliform limits are:

- i. The moving median value for the Most Probable Number (MPN) of total coliform bacteria in five (5) consecutive samples shall not exceed 240 MPN/100 ml; and,
  - ii. Any single sample shall not exceed 10,000 MPN/100 ml
- d) Effluent Limitation B.4 (BOD and TSS monthly average 85 percent removal): These are standard secondary treatment requirements and existing permit effluent limitations based on Basin Plan requirements (Table 4-2, pg. 4-69), derived from federal requirements (40 CFR 133.102; definition in 133.101). Compliance has been demonstrated by existing plant performance for ordinary flows (dry weather flows and most wet weather flows). During the past few years, the Discharger has consistently met these removal efficiency limits.
- e) Effluent Limitation B.5 (Whole Effluent Acute Toxicity): The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limits are necessary to ensure that this objective is protected. The previous permit contained whole effluent acute toxicity limits for an 11-sample median and 11-sample 90<sup>th</sup> percentile. Since the Discharger only conducts acute toxicity tests on a quarterly basis, it is more appropriate to have limits based on a 3-sample median and single-sample maximum. These acute toxicity limits are based on the Basin Plan (Table 4-4, pg. 4-70).
- f) Effluent Limitation B.6 (Toxic Substances): Reasonable Potential Analysis (RPA): 40 CFR 122.44(d)(1)(i) specifies that permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard". Thus, the fundamental step in determining whether or not a WQBEL is required is to assess a pollutant's reasonable potential of excursion of its applicable WQO or WQC. The following section describes the RPA methodology and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.
- i) *WQOs and WQC*: The RPA involves the comparison of effluent data with appropriate WQOs including narrative toxicity objectives in the Basin Plan, applicable WQC in the CTR/NTR, and USEPA's 1986 Quality Criteria for Water. The Basin Plan objectives and CTR criteria are shown in Attachment 1 of this Fact Sheet.
  - ii) *Methodology*: The RPA is conducted using the method and procedures prescribed in Section 1.3 of the SIP. Board staff has analyzed the effluent and background data and the nature of facility operations to determine if the discharge has reasonable potential to cause or contribute to exceedances of applicable WQOs or WQC. Attachment 1 of this Fact Sheet shows the step-wise process described in Section 1.3 of the SIP.
  - iii) *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from 1997 through 2001 for metals, cyanide, and polynuclear aromatic

hydrocarbons (PAHs) (see Attachment 2 of this Fact Sheet). Water quality data collected from 1993 to 2000 at the Yerba Buena Island and Richardson Bay monitoring stations through the Regional Monitoring Program (RMP) were reviewed to determine the maximum observed background values. The RMP stations at Yerba Buena Island and Richardson Bay have been sampled for most of the inorganic and some of the organic toxic pollutants. However, not all the constituents listed in the CTR were analyzed by the RMP during this time. This data gap is addressed by issuance of a technical information request (13267) letter dated August 6, 2001 by Board staff, entitled Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy.

- iv) *RPA determination:* The RPA results are shown below in Table B and Attachment 1 of this Fact Sheet. Pollutants that exhibit RP include copper, 4,4'-DDE, and dieldrin.

**Table B. Summary of Reasonable Potential Results**

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>1</sup> (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results <sup>2</sup>
2	Arsenic	2.4	36	2.46	N
4	Cadmium	0.11	0.62	0.1268	CD
5b	Chromium (VI)	0.5	11	4.4	N
6	Copper	9.5	3.7	2.45	Y
7	Lead	0.5	1.2	0.8	CD
8	Mercury	0.01	0.025	0.0064	CD
9	Nickel	3.8	7.1	3.7	CD
10	Selenium	0.5	5	0.39	N
11	Silver	0.06	1.07	0.0683	N
13	Zinc	22	54.89	4.6	CD
14	Cyanide	5	1	NA	U <sub>b</sub>
16	2,3,7,8-TCDD (Dioxin)	NA	1.4E-08	NA	N
17	Acrolein	NA	780	NA	N
18	Acrylonitrile	NA	0.66	NA	N
19	Benzene	NA	71	NA	N
20	Bromoform	NA	360	NA	N
21	Carbon Tetrachloride	NA	4.4	NA	N
22	Chlorobenzene	NA	21000	NA	N
23	Chlordibromomethane	NA	34	NA	N
24	Chloroethane	NA	NA	NA	U <sub>o</sub>
25	2-Chloroethylvinyl Ether	NA	NA	NA	U <sub>o</sub>
26	Chloroform	NA	NA	NA	U <sub>o</sub>
27	Dichlorobromomethane	NA	46	NA	N
28	1,1-Dichloroethane	NA	NA	NA	U <sub>o</sub>
29	1,2-Dichloroethane	NA	99	NA	N
30	1,1-Dichloroethylene	NA	3.2	NA	N
31	1,2-Dichloropropane	NA	39	NA	N
32	1,3-Dichloropropylene	NA	1700	NA	N
33	Ethylbenzene	NA	29000	NA	N
34	Methyl Bromide	NA	4000	NA	N
35	Methyl Chloride	NA	NA	NA	U <sub>o</sub>
36	Methylene Chloride	NA	1600	NA	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>1</sup> (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results <sup>2</sup>
37	1,1,2,2-Tetrachloroethane	NA	11	NA	N
38	Tetrachloroethylene	NA	8.85	NA	N
39	Toluene	NA	200000	NA	N
40	1,2-Trans-Dichloroethylene	NA	140000	NA	N
41	1,1,1-Trichloroethane	NA	NA	NA	Uo
42	1,1,2-Trichloroethane	NA	42	NA	N
43	Trichloroethylene	NA	81	NA	N
44	Vinyl Chloride	NA	525	NA	N
45	Chlorophenol	NA	400	NA	N
46	2,4-Dichlorophenol	NA	790	NA	N
47	2,4-Dimethylphenol	NA	2300	NA	N
48	2-Methyl-4,6-Dinitrophenol	NA	765	NA	N
49	2,4-Dinitrophenol	NA	14000	NA	N
50	2-Nitrophenol	NA	NA	NA	Uo
51	4-Nitrophenol	NA	NA	NA	Uo
52	3-Methyl-4-Chlorophenol	NA	NA	NA	Uo
53	Pentachlorophenol	NA	7.9	NA	N
55	2,4,6-Trichlorophenol	NA	6.5	NA	N
56	Acenaphthene	0.17	2700	0.0015	N
57	Acenaphthylene	0.03	NA	0.00053	Uo
58	Anthracene	0.16	110000	0.005	N
59	Benzidine	NA	0.00054	NA	N
60	Benzo(a)Anthracene	0.12	0.049	0.0053	N
61	Benzo(a)Pyrene	0.09	0.049	0.00029	N
62	Benzo(b)Fluoranthene	0.11	0.049	0.0046	N
63	Benzo(ghi)Perylene	0.06	NA	0.0027	Uo
64	Benzo(k)Fluoranthene	0.16	0.049	0.0015	N
65	Bis(2-Chloroethoxy)Methane	NA	NA	NA	Uo
66	Bis(2-Chloroethyl)Ether	NA	1.4	NA	N
67	Bis(2-Chloroisopropyl)Ether	NA	170000	NA	N
68	Bis(2-Ethylhexyl)Phthalate	NA	5.9	NA	N
69	4-Bromophenyl Phenyl Ether	NA	NA	NA	Uo
70	Butylbenzyl Phthalate	NA	5200	NA	N
71	2-Chloronaphthalene	NA	4300	NA	N
72	4-Chlorophenyl Phenyl Ether	NA	NA	NA	Uo
73	Chrysene	0.14	0.049	0.0024	N
74	Dibenzo(a,h)Anthracene	0.04	0.049	0.00064	N
75	1,2 Dichlorobenzene	NA	17000	NA	N
76	1,3 Dichlorobenzene	NA	2600	NA	N
77	1,4 Dichlorobenzene	NA	2600	NA	N
78	3,3-Dichlorobenzidine	NA	0.077	NA	N
79	Diethyl Phthalate	NA	120000	NA	N
80	Dimethyl Phthalate	NA	2900000	NA	N
81	Di-n-Butyl Phthalate	NA	12000	NA	N
82	2,4-Dinitrotoluene	NA	9.1	NA	N
83	2,6-Dinitrotoluene	NA	NA	NA	Uo
84	Di-n-Octyl Phthalate	NA	NA	NA	Uo

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>1</sup> (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background (µg/L)	RPA Results <sup>2</sup>
85	1,2-Diphenylhydrazine	NA	0.54	NA	N
86	Fluoranthene	0.03	370	0.011	N
87	Fluorene	0.02	14000	0.00208	N
88	Hexachlorobenzene	NA	0.00077	0.0000202	N
89	Hexachlorobutadiene	NA	50	NA	N
90	Hexachlorocyclopentadiene	NA	17000	NA	N
91	Hexachloroethane	NA	8.9	NA	N
92	Indeno(1,2,3-cd) Pyrene	0.04	0.049	0.004	N
93	Isophorone	NA	600	NA	N
94	Naphthalene	0.05	NA	0.0023	Uo
95	Nitrobenzene	NA	1900	NA	N
96	N-Nitrosodimethylamine	NA	8.1	NA	N
97	N-Nitrosodi-n-Propylamine	NA	1.4	NA	N
98	N-Nitrosodiphenylamine	NA	16	NA	N
99	Phenanthrene	0.03	NA	0.0061	Uo
100	Pyrene	0.03	11000	0.0051	N
101	1,2,4-Trichlorobenzene	NA	NA	NA	Uo
102	Aldrin	NA	0.00014	NA	N
103	alpha-BHC	NA	0.013	NA	N
104	beta-BHC	NA	0.046	NA	N
105	gamma-BHC	NA	0.063	NA	N
106	delta-BHC	NA	NA	NA	Uo
107	Chlordane	NA	0.00059	0.00018	N
108	4,4'-DDT	NA	0.00059	0.000066	N
109	4,4'-DDE	NA	0.00059	0.00069	Y
110	4,4'-DDD	NA	0.00084	0.000313	N
111	Dieldrin	NA	0.00014	0.000264	Y
112	alpha-Endosulfan	NA	0.0087	0.000031	N
113	beta-Endosulfan	NA	0.0087	0.000069	N
114	Endosulfan Sulfate	NA	240	0.0000819	N
115	Endrin	NA	0.0023	0.000036	N
116	Endrin Aldehyde	NA	0.81	NA	N
117	Heptachlor	NA	0.00021	0.000019	N
118	Heptachlor Epoxide	NA	0.00011	0.000094	N
119-125	PCBs	NA	0.00017	NA	N
126	Toxaphene	NA	0.0002	NA	N
	Tributyltin	NA	0.005	NA	Ub, Ud

1) Maximum Effluent Concentration (MEC) in bold is the actual detected MEC, otherwise the MEC shown is the minimum detection level.

NA = Not Available (monitoring data is not available for this constituent).

2) RP = Yes, if either MEC or Background > WQO/WQC.

RP = Uo (undetermined if no objective promulgated).

RP = Ub (undetermined due to lack of background data)

RP = CD (cannot determine due to limited data)

v) *Organic constituents with limited data:* Due to the small size and primarily domestic nature of the discharge, the Board's June 28, 2002 Conditional Approval of the Discharger's Sampling Plan does not require the Discharger to monitor effluent for organic constituents.

This letter explained that for this discharge it is appropriate to limit priority pollutant monitoring to constituents that may have a reasonable potential to cause localized toxicity to aquatic organisms.

- vi) *Uncertainties of RPA.* Board staff used the below analysis to determine the appropriate monitoring frequency for constituents that have WQO/WQC that are aquatic life driven. For arsenic, cadmium, chromium (VI), lead, mercury, nickel, selenium, silver, and zinc, the RPA results are based on a limited data set of two samples. This limited data set may not accurately reflect the full range of concentrations for these constituents. To determine if a larger data set might trigger reasonable potential for these constituents, Board staff determined the maximum projected concentration of each constituent in accordance with the methodology described in *Technical Support Document for Water Quality-Based Toxics Control* (Technical Support Document) published by the USEPA Publication No. 505/2-90-001 and compared it with the most stringent water quality objective. For a 99% confidence level with only two data points, the Technical Support Document (p. 53-54) indicates that the projected MEC is determined by multiplying the actual MEC by 7.4. Table C below shows the results of this analysis.

**Table C. Potential of Priority Pollutant Metals to Trigger Reasonable Potential**

<u>Constituent</u>	<u>Projected MEC (µg/L)</u>	<u>WQO/WQC (µg/L)</u>	<u>Projected MEC &gt; WQO/WQC = More data necessary?</u>
Arsenic	17.8	36	No = one more sample to confirm
Cadmium	0.82	0.62	Yes = quarterly monitoring
Chromium(VI)	3.7	11	No = one more sample to confirm
Lead	<3.7	1.2	Possibly = annual monitoring
Mercury	<0.074	0.025	Possibly = annual monitoring
Nickel	28.1	7.1	Yes = quarterly monitoring
Selenium	3.7	5.0	No = one more sample to confirm
Silver	<0.44	1.1	No = one more sample to confirm
Zinc	162.8	54.9	Yes = quarterly monitoring

- vii) *Pollutants with no reasonable potential:* WQBELs are not included in the Order for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC. However, monitoring for some of those pollutants is still required, as specified in the Board's conditional approval of the Discharger's Sampling Plan. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.
- viii) *Permit Reopener:* The permit includes a reopener provision to allow numeric effluent limits to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC. This determination, based on monitoring results, will be made by the Board.
1. **Final Water Quality-Based Effluent Limits:** The final WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. Final effluent limitations were calculated based on appropriate WQOs/WQC, background concentrations at the Yerba Buena Island

and Richardson Bay RMP Stations, a maximum dilution credit of 10:1 (for non-bioaccumulative pollutants), and the appropriate procedures specified in Section 1.4 of the SIP (See Attachment 2 of this Fact Sheet). For the purpose of the Proposed Order, final WQBELs refer to all non-interim effluent limitations. The WQO or WQC used for each pollutant with reasonable potential is indicated in Table D below as well as in Attachment 2.

**Table D. Water Quality Objectives/Criteria for Pollutants with RP**

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Basis of Lowest WQO/WQC Used in RP
Copper	3.7	5.8	CTR
4,4'-DDE	0.00059	--	CTR
Dieldrin	0.00014	--	CTR

2. Interim Limits: Even though copper exhibits a reasonable potential and the maximum observed concentration is below the average monthly effluent limitation, Board staff determined that it was not appropriate to include a final effluent limitation. The Discharger has only collected two effluent copper samples in the last five years and it may not be feasible for the Discharger to meet the final copper effluent limits (Board staff could not use a statistical approach to determine feasibility to comply due to the limited data set). As such, this Order carries over the previous Order's limit and requires the Discharger to implement monthly monitoring for one year and quarterly thereafter. Once sufficient copper data is available, the permit will be re-opened and the Discharger will be required to comply with final copper limits immediately or in accordance with an appropriate time schedule.
3. No limits for 4,4'-DDE and Dieldrin: While the RPA indicates that 4,4'-DDE and Dieldrin exhibit a reasonable potential, a lack of discharge data prohibits determination of the Discharger's ability to comply. Therefore, this Order requires the Discharger to collect one sample for these pollutants to fill this data gap. The Board deems one sample as adequate owing to the small size and domestic nature of this discharge and the fact that these pesticides are historic.
4. Dilution Credits: The previous permit granted a dilution credit of 10:1, and the Discharger has not requested higher credits. Board staff believes a conservative limit of 10:1 dilution credit for discharges to the Bay is necessary for protection of beneficial uses. The basis for limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for derivation of the dilution credit:
  - a. A far-field background station is appropriate because the receiving waterbody (Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs.
  - b. Due to the complex hydrology of the San Francisco Bay, a mixing zone cannot be accurately established.
  - c. Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.
  - d. The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, silver, nickel and lead).

The main justification for using a 10:1 dilution credit is uncertainty in accurately determining ambient background and uncertainty in accurately determining the mixing zone in a complex estuarine system with multiple wastewater discharges.

**a. Complex Estuarine System Necessitates Far-Field Background** - The SIP allows background to be determined on a discharge-by-discharge or water body-by-water body basis (SIP section 1.4.3). Consistent with the SIP, Board staff has chosen to use a water body-by-water body basis because of the uncertainties inherent in accurately characterizing ambient background in a complex estuarine system on a discharge-by-discharge basis.

With this in mind, the Yerba Buena Island and Richardson Bay Stations fit the guidance for ambient background in the SIP compared to other stations in the Regional Monitoring Program. The SIP states that background data are applicable if they are "representative of the ambient receiving water column that will mix with the discharge." Board Staff believe that data from these stations are representative of water that will mix with the discharge from Outfall 001. Although these stations are located near the Golden Gate, they would represent the typical water flushing in and out in the Bay Area each tidal cycle. For most of the Bay Area, the waters represented by these stations make up a large part of the receiving water that will mix with the discharge.

**b. Uncertainties Prevent Accurate Mixing Zones in Complex Estuarine Systems** - There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used by dischargers to predict dilution have not considered the three-dimensional nature of the currents in the estuary resulting from the interaction of tidal flushes and seasonal fresh water outflows. Salt water is heavier than fresh water. Colder salt water from the ocean flushes in twice a day generally under the warmer fresh rivers waters that flows out annually. When these waters mix and interact, complex circulation patterns occur due to the different densities of these waters. These complex patterns occur throughout the estuary but are most prevalent in the San Pablo Bay, Carquinez Strait, and Suisun Bay areas. The locations change depending on the strength of each tide and the variable rate of delta outflow. Additionally, sediment loads to the Bay from the Central Valley also change on a longer-term basis. These changes can result in changes to the depths of different parts of the Bay making some areas more shallow and/or other areas more deep. These changes affect flow patterns that in turn can affect the initial dilution achieved by a discharger's diffuser.

**c. Dye studies do not account for cumulative effects from other discharges** - The tracer and dye studies conducted are often not long enough in duration to fully assess the long residence time of a portion of the discharge that is not flushed out of the system. In other words, some of the discharge, albeit a small portion, makes up part of the dilution water. So unless the dye studies are of long enough duration, the diluting effect on the dye measures only the initial dilution with "clean" dilution water rather than the actual dilution with "clean" dilution water plus some amount of original discharge that resides in the system. Furthermore, both models and dye studies that have been conducted have not considered the effects of discharges from other nearby discharge sources, nor the cumulative effect of discharges from over 20 other major dischargers to San Francisco Bay system. While it can be argued the effects from other discharges are accounted for by factoring in the local background concentration in calculating the limits, accurate characterization of local background levels are also subject to uncertainties resulting from the interaction of tidal flushing and seasonal fresh water outflows described above.

**d. Mixing Zone Is Further Limited for Persistent Pollutants** - Discharges to the Bay Area waters are not completely-mixed discharges as defined by the SIP. Thus, the dilution credit



should be determined using site-specific information for incompletely-mixed discharges. The SIP in section 1.4.2.2 specifies that the Regional Board "significantly limit a mixing zone and dilution credit as necessary... For example, in determining the extent of ... a mixing zone or dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are ... persistent." The SIP defines persistent pollutants to be "substances for which degradation or decomposition in the environment is nonexistent or very slow." The pollutants at issue here are persistent pollutants (e.g., copper, lead, nickel). The dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, such as their long-term effects on sediment concentrations."

#### **5. Basis for Receiving Water Limitations**

- a) Receiving water limitations C.1, C.2, and C.3 (conditions to be avoided): These limits are based on the previous Order and the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, page 3-2 – 3-5.
- b) Receiving water limitation C.4 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

#### **6. Basis for Self-Monitoring Requirements**

The SMP includes monitoring for conventional, non-conventional, and toxic pollutants, and acute toxicity. As a result of the data review performed for this permit reissuance, this Order requires monthly monitoring for copper for one year and quarterly thereafter; quarterly monitoring for cadmium, nickel, and zinc; annual monitoring for lead, mercury, and cyanide; and once every five years for arsenic, hexavalent chromium, selenium, silver, dieldrin, and 4,4'-DDE. In lieu of near field discharge specific ambient monitoring, it is acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the August 6, 2001 letter, and the RMP.

#### **7. Basis for Sludge Management Practices**

These requirements are based on Table 4.1 of the Basin Plan and 40 CFR 503.

#### **8. Basis for Provisions**

- a) Provisions E.1. (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous permit Order is 40 CFR 122.46.
- b) Provision E.2 (Repair and Renewal of Sand Filter Beds). This provision requires the Discharger to certify that all four of its sand filter beds can adequately treat wastewater before it is permitted a higher flow limit.
- c) Provision E.3 (Receiving Water Monitoring). This provision, which requires the Discharger to continue to conduct receiving water monitoring is based on the previous Order and the Basin Plan.
- d) Provision E.4 (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limits for acute toxicity will be demonstrated. Conditions initially include the use of 96-hour static renewal bioassays, the use of fathead minnow, rainbow

trout, or three-spine stickleback as the test species, and the use of approved test methods as specified. On April 1, 2004, the Discharger shall switch from the 3<sup>rd</sup> to 4<sup>th</sup> Edition USEPA protocol, unless it demonstrates that such a switch is not feasible.

- e) Provision E.5 (Operations and Maintenance Manual): These provisions are based on the Basin Plan, requirements of 40 CFR 122 and the previous permit.
- f) Provision E.6 (Contingency Plan Update): The Contingency Plan provision is based on the requirements stipulated in Board Resolution No. 74-10 and the previous permit.
- g) Provision E.7 (Self-Monitoring Program): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits issued by the Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains a sampling program specific for the WWTP. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.
- h) Provision E.8 (Standard Provisions and Reporting Requirements): The purpose of this provision is require compliance with the standard provisions and reporting requirements given in this Board's document titled *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. That document is incorporated in the permit as an attachment to it. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the permit specifications shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.
- i) Provision E.9 (Change in Control or Ownership): This provision is based on 40 CFR 122.61.
- j) Provision E.10 (Permit Reopener): This provision is based on 40 CFR 123
- k) Provision E.11 (NPDES Permit /USEPA concurrence): This provision is based on 40 CFR 123.
- l) Provision E.12 (Permit Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).

## **V. WASTE DISCHARGE REQUIREMENT APPEALS**

Any person may petition the State Water Resources Control Board to review the decision of the Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Board public hearing.

## **VI. ATTACHMENTS**

**Attachment 1:** RPA Results for Priority Pollutants

**Attachment 2:** Calculation of Final QBELs Credit

Attachment 1  
Port Costa Contra Costa County SD No. 5  
Reasonable Potential Analysis - Priority Pollutants  
(1997-2002 data)  
(October 2002)  
(all values in micrograms per liter unless otherwise denoted)

# in CTR	PRIORITY POLLUTANTS	CTR Water Quality Criteria (ug/L)										Step 2		Step 3	
		Freshwater (from Table 3-4)					Saltwater (from Table 3-3)					Number of data points	All non-Detected?	MinDL (ug/L)	If all data points are ND and MinDL > C, interim monitoring is required
		4-day	1-hr	24-hr	Max	4-day	1-hr	24-hr	Max	4-day	1-hr				
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L				
1	Antimony														
2	Arsenic	200	190	360		340	150	89	36	4,300		2	N		All ND, MinDL < C, MEC=MinDL
3	Beryllium														All ND, MinDL < C, MEC=MinDL
4	Cadmium	30.0	0.62	1.6		0.97	0.15	42.3	9.4	0.62		2	N		No criteria
5a	Chromium (III)					916.3	109.8			109.8					No data, to Step 5
5b	Chromium (VI) or total Cr	110	11	16		16	11	1,108	50			2	N		
6	Copper	200	6.09	8.53		6.7	4.8	8.8	3.7	3.7		2	N		
7	Lead	56	1.18	30.4		30.4	1.2	221	8.5			2	Y	0.5	All ND, Min DL < C, MEC=MinDL
8	Mercury	1	0.025	2.4		0.025	2.4			0.05		2	Y	0.01	All ND, Min DL < C, MEC=MinDL
9	Nickel	71	61.74	735.26	55	1,100				4,600		2	N		
10	Selenium											2	N		
11	Silver	23				1.07						2	Y	0.06	All ND, MinDL < C, MEC=MinDL
12	Thallium														
13	Zinc	590	84.89	60.61	58	170	62.1	95	86	6.3		2	N		
14	Cyanide	25	5.2	22		22	5	1	1	220,000		1	Y	5	All ND, Min DL > C, Go to Step 5
15	Asbestos														No criteria
16	2,3,7,8-TCDD (Dioxin)									0.00000014		0			No data, to Step 5
17	Aroclor									780		0			No data, to Step 5
18	Acrylonitrile									0.86		0			No data, to Step 5
19	Benzene									71		0			No data, to Step 5
20	Bromofom									360		0			No data, to Step 5
21	Carbon Tetrachloride									4.4		0			No data, to Step 5
22	Chlorobenzene									21,000		0			No data, to Step 5
23	Chlorobromomethane									34		0			No data, to Step 5
24	Chloroethane											0			No data, to Step 5
25	2-Chloroethylvinyl Ether											0			No criteria
26	Chloroform											0			No criteria
27	Dichlorobromomethane									46		0			No data, to Step 5
28	1,1-Dichloroethane											0			No data, to Step 5
29	1,2-Dichloroethane									99		0			No data, to Step 5
30	1,1-Dichloroethylene									3.2		0			No data, to Step 5
31	1,2-Dichloropropane									39		0			No data, to Step 5
32	1,3-Dichloropropylene									1,700		0			No data, to Step 5
33	Ethylbenzene									29,000		0			No data, to Step 5
34	Methyl Bromide									4,000		0			No data, to Step 5
35	Methyl Chloride											0			No criteria
36	Methylene Chloride									1,600		0			No data, to Step 5
37	1,1,2,2-Tetrachloroethane									11		0			No data, to Step 5
38	Tetrahydrofuran									8.95		0			No data, to Step 5
39	Toluene									200,000		0			No data, to Step 5
40	1,2-Trans-Dichloroethylene									140,000		0			No data, to Step 5
41	1,1,1-Trichloroethane											0			No criteria
42	1,1,2-Trichloroethane									42		0			No data, to Step 5
43	Trichloroethylene									81		0			No data, to Step 5
44	Vinyl Chloride									525		0			No data, to Step 5
45	Chlorophenol									400		0			No data, to Step 5
46	2,4-Dichlorophenol									790		0			No data, to Step 5
47	2,4-Dimethylphenol									2,300		0			No data, to Step 5
48	2-Methyl-4,6-Dinitrophenol									765		0			No data, to Step 5
49	2,4-Dinitrophenol									14,000		0			No data, to Step 5
50	2-Nitrophenol											0			No criteria
51	4-Nitrophenol											0			No criteria

Attachment 1  
Port Costa Contra Costa County SD No. 5  
Reasonable Potential Analysis - Priority Pollutants  
(1987-2002 data)  
(October 2002)  
(all values in micrograms per liter unless otherwise denoted)

		Step 4		Step 5		Step 6		Final Result	
# in CTR	PRIORITY POLLUTANTS	MEC (µg/L) Pollutant Concentration from the effluent	MEC vs. C	B (µg/L)	B vs. C	If B<C, effluent limitation is required		Result	Reason
		1. If MEC> or =C, effluent limitation is required; 2. If MEC<C, go to Step 5	Maximum Ambient Background Concentration						
1	Antimony		MEC<C, go to Step 5	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	MEC<C & no B
2	Asenic	2.4	MEC<C, go to Step 5	2.46	B<C, Step 7	B<C, Step 7	No	No	MEC<C & B<C
3	Beryllium	No criteria	No criteria	No RMP data, Step 7	No criteria	No criteria	Uo	No	No criteria
4	Cadmium	0.11	MEC<C, go to Step 5	0.1268	B<C, Step 7	B<C, Step 7	CD	CD	MEC<C & B<C
5a	Chromium (III)		No data, go to Step 5	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	CD	CD	no effluent data & no B
5b	Chromium (VI) or total Cr	0.5	MEC<C, go to Step 5	4.4	B<C, Step 7	B<C, Step 7	No	No	MEC<C & B<C
6	Copper	9.5	MEC<C, go to Step 5	2.45	B<C, Step 7	B<C, Step 7	Yes	Yes	MEC>C
7	Lead	0.5	MEC<C, go to Step 5	0.8	B<C, Step 7	B<C, Step 7	CD	CD	MEC<C & B<C
8	Mercury	0.01	MEC<C, go to Step 5	0.0064	B<C, Step 7	B<C, Step 7	CD	CD	MEC<C & B<C
9	Nickel	3.8	MEC<C, go to Step 5	3.7	B<C, Step 7	B<C, Step 7	CD	CD	MEC<C & B<C
10	Selenium	0.5	MEC<C, go to Step 5	0.39	B<C, Step 7	B<C, Step 7	No	No	MEC<C & B<C
11	Silver	0.06	MEC<C, go to Step 5	0.0683	B<C, Step 7	B<C, Step 7	No	No	MEC<C & B<C
12	Thallium		MEC<C, go to Step 5	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	MEC<C & B<C
13	Zinc	22	MEC<C, go to Step 5	4.6	B<C, Step 7	B<C, Step 7	CD	CD	MEC<C & B<C
14	Cyanide		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	Uo	Uo	Min DL>C & No B
15	Asbestos		No criteria	No RMP data, Step 7	No criteria	No criteria	Uo	Uo	No criteria
16	2,3,7,8-TCDD (Dioxin)		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
17	Aroclor		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
18	Acrylonitrile		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
19	Benzene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
20	Bromofom		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
21	Carbon Tetrachloride		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
22	Chlorobenzene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
23	Chlorobromomethane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
24	Chloroethane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
25	2-Chloroethyl Vinyl Ether		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
26	Chlorofom		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
27	Dichlorobromomethane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
28	1,1-Dichloroethane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
29	1,2-Dichloroethane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
30	1,1-Dichloroethylene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
31	1,2-Dichloropropane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
32	1,3-Dichloropropylene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
33	Ethylbenzene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
34	Methyl Bromide		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
35	Methyl Chloride		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
36	Methylene Chloride		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
37	1,1,2,2-Tetrachloroethane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
38	Tetrachloroethylene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
39	Toluene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
40	1,2-Trans-Dichloroethylene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
41	1,1,1-Trichloroethane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
42	1,1,2-Trichloroethane		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
43	Trichloroethylene		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
44	Vinyl Chloride		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
45	Chlorophenol		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
46	2,4-Dichlorophenol		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
47	2,4-Dimethylphenol		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
48	2-Methyl-4,6-Dinitrophenol		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
49	2,4-Dinitrophenol		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
50	2-Nitrophenol		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data
51	4-Nitrophenol		No criteria	No RMP data, Step 7	No ambient data, to Step 7	No ambient data, to Step 7	No	No	No data

Attachment 1  
Port Costa Contra Costa County SD No. 5  
Reasonable Potential Analysis - Priority Pollutants  
(1987-2002 data)  
(October 2002)  
(all values in micrograms per liter unless otherwise denoted).

# in CTR	PRIORITY POLLUTANTS	CTR Water Quality Criteria (ug/L)										Lowest (most stringent) Criteria (1) ug/L	Step 2		Step 3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		Freshwater (from Table 3-4)					Saltwater (from Table 3-3)						Number of data points	All non-Detected?	MinDL (ug/L)	If all data points are ND and MinDL > C, interim monitoring is required																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		4-day ug/L	1-hr ug/L	24-hr ug/L	Max ug/L	4-day ug/L	1-hr ug/L	24-hr ug/L	Max ug/L	CMC (acute) ug/L	CC (chronic) ug/L						CMC (acute) ug/L	CC (chronic) ug/L	Organisms only ug/L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
		ug/L																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

Attachment 1  
Port Costa Contra Costa County SD No. 5  
Reasonable Potential Analysis - Priority Pollutants  
(1997-2002 data)  
(October 2002)

(all values in micrograms per liter unless otherwise denoted)

# in CTR	PRIORITY POLLUTANTS	Step 4		Step 5		Step 6		Final Result	
		MEC (µg/L) Pollutant Concentration from the effluent	MEC vs. C	B (µg/L)	B vs. C	Maximum Ambient Background Concentration	If B>C, effluent limitation is required	Result	Reason
52	5-Methyl-4-Chlorophenol	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No criteria
53	Pentachlorophenol			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
54	Phenol			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
55	2,4,6-Trichlorophenol			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
56	Acenaphthene	0.17	MEC<C, go to Step 5			0.0015	B<C, Step 7	No	MEC<C & B<C
57	Acenaphthylene	No criteria	No criteria			0.00053	No criteria	Uo	No criteria
58	Anthracene	0.16	MEC<C, go to Step 5			0.0005	B<C, Step 7	No	MEC<C & B<C
59	Benzidine			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
60	Benzo(a)Anthracene					0.0053	B<C, Step 7	No	UD: B<C & Min DI > C
61	Benzo(a)Pyrene					0.00029	B<C, Step 7	No	UD: B<C & Min DI > C
62	Benzo(b)Fluoranthene					0.0046	B<C, Step 7	No	UD: B<C & Min DI > C
63	Benzo(ghi)Perylene					0.0027	No criteria	Uo	No criteria
64	Benzo(k)Fluoranthene					0.0015	B<C, Step 7	No	UD: B<C & Min DI > C
65	Bis(2-Chloromethoxy)Methane	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No criteria
66	Bis(2-Chloroethoxy)Ether			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
67	Bis(2-Chloroisopropyl)Ether			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
68	Bis(2-Ethylhexyl)Phthalate			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
69	4-Bromophenyl Phenyl Ether	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
70	Butylbenzyl Phthalate			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
71	2-Chloronaphthalene			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
72	4-Chlorophenyl Phenyl Ether	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No criteria
73	Chrysene					0.0024	B<C, Step 7	No	UD: B<C & Min DI > C
74	Dibenzo(a,h)Anthracene	0.04	MEC<C, go to Step 5			0.00064	B<C, Step 7	No	MEC<C & B<C
75	1,2-Dichlorobenzene			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
76	1,3-Dichlorobenzene			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
77	1,4-Dichlorobenzene			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
78	3,3'-Dichlorobenzidine			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
79	Diethyl Phthalate			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
80	Dimethyl Phthalate			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
81	Di-n-Butyl Phthalate			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
82	2,4-Dinitrotoluene			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
83	2,6-Dinitrotoluene	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
84	Di-n-Octyl Phthalate	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
85	1,2-Diphenylhydrazine			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
86	Fluoranthene	0.03	MEC<C, go to Step 5			0.011	B<C, Step 7	No	MEC<C & B<C
87	Fluorene	0.02	MEC<C, go to Step 5			0.00208	B<C, Step 7	No	MEC<C & B<C
88	Hexachlorobenzene					0.0000202	B<C, Step 7	No	UD: B<C & no effluent
89	Hexachlorobutadiene			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
90	Hexachlorocyclopentadiene			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
91	Hexachloroethane			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
92	Indeno(1,2,3-cd) Pyrene	0.04	MEC<C, go to Step 5			0.004	B<C, Step 7	No	MEC<C & B<C
93	Isophorone			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
94	Naphthalene	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
95	Nitrobenzene			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
96	N-Nitrosodimethylamine			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
97	N-Nitrosodi-n-Propylamine			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
98	N-Nitrosodiphenylamine			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
99	Phenanthrene	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
100	Pyrene	0.03	MEC<C, go to Step 5			0.0061	B<C, Step 7	No	MEC<C & B<C
101	1,2,4-Trichlorobenzene	No criteria	No criteria	No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data
102	Aldrin			No RMP data, Step 7	No criteria	No RMP data, Step 7	No criteria	Uo	No data

Attachment 1  
Port Costa Contra Costa County SD No. 5  
Reasonable Potential Analysis - Priority Pollutants  
(1997-2002 data)  
(October 2002)  
(all values in micrograms per liter unless otherwise denoted)

# in CTR	PRIORITY POLLUTANTS	CTR Water Quality Criteria (ug/L)												Step 2		Step 3			
		Freshwater (from Table 3-4)						Saltwater (from Table 3-3)						Lowest (most stringent) Criteria (1)	All non-Detected?	Minimum Detection Limit	If all data points are ND and MnDL > C, interim monitoring is required		
		4-day			1-hr			24-hr			Max							Number of data points	MnDL (ug/L)
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L						

- Notes:
- (1) Reasonable Potential Analysis based on the lowest CTR criteria except for arsenic, cadmium, chromium, lead, mercury, nickel, silver and zinc (where the Basin Plan water quality objectives apply).
  - (2) PCBs sum refers to sum of PCB 1016, 1221, 1232, 1242, 1248, 1254, and 1260
  - (3) Receiving body: minimum hardness from Pacheco Creek RMP Station = 46 mg/L as CaCO<sub>3</sub>; default pH = 7.8
  - (4) Bold are 303(d) listed pollutants
  - (5) RP=Yes, if either MEC or Background > WQO/WQC  
RP=No (undetermined if no objective promulgated)  
RP=Ub (undetermined due to lack of background data)  
RP=CD (cannot determine due to limited data)

Attachment 1  
Port Costa Contra Costa County SD No. 5  
Reasonable Potential Analysis - Priority Pollutants  
(1997-2002 data)  
(October 2002)

(all values in micrograms per liter unless otherwise denoted)

# in CTR	PRIORITY POLLUTANTS	Step 4		Step 5		Step 6		Final Result	
		MEC (µg/L) Concentration from the effluent	MEC vs. C	B (µg/L)	Maximum Ambient Background Concentration	B vs. C	If B>C, effluent limitation is required	Result	Reason
103	alpha-BHC				No RMP data, Step 7	No ambient data, to Step 7	No	No	No data
104	beta-BHC				No RMP data, Step 7	No ambient data, to Step 7	No	No	No data
105	gamma-BHC				No RMP data, Step 7	No ambient data, to Step 7	No	No	No data
106	delta-BHC	No criteria	No criteria		No RMP data, Step 7	No criteria	Uo	No	No criteria
107	Chlordane				0.00018	B<C, Step 7	No	No	UD; B<C & no effluent
108	4,4-DDT				0.000066	B<C, Step 7	No	No	UD; B<C & no effluent
109	4,4-DDE				0.00069	B>C, Effluent Limit required	Yes	Yes	B>C
110	4,4-DDD				0.000313	B<C, Step 7	No	No	UD; B<C & no effluent
111	Dieldrin				0.000264	B>C, Effluent Limit required	Yes	Yes	B>C
112	alpha-Endosulfan				0.000031	B<C, Step 7	No	No	UD; B<C & no effluent
113	beta-Endosulfan				0.000069	B<C, Step 7	No	No	UD; B<C & no effluent
114	Endosulfan Sulfate				0.0000819	B<C, Step 7	No	No	UD; B<C & no effluent
115	Endrin				0.000036	B<C, Step 7	No	No	UD; B<C & no effluent
116	Endrin Aldehyde				No RMP data, Step 7	No ambient data, to Step 7	No	No	MEC<C & no B
117	Heptachlor				0.000019	B<C, Step 7	No	No	UD; B<C & no effluent
118	Heptachlor Epoxide				0.000094	B<C, Step 7	No	No	UD; B<C & no effluent
119-125	PCBs sum (2)				No RMP data, Step 7	No ambient data, to Step 7	No	No	No data
126	Toxaphene				No RMP data, Step 7	No ambient data, to Step 7	No	No	No data
	Tributyltin				No RMP data, Step 7	No ambient data, to Step 7	No	No	No data



PRIORITY POLLUTANTS		Copper	4,4'-DDE	Dieldrin
Basis and Criteria type		CTR - SW	HH	HH
Lowest WQO		3.7	0.00059	0.00014
Translators		0.83		
Dilution Factor (D) (if applicable)		9		
no. of samples per month		4	4	4
Aquatic life criteria required? (Y/N)		Y	N	N
HH criteria analysis required? (Y/N)		N	Y	Y
Applicable Acute WQO		5.8		
Applicable Chronic WQO		3.7		
HH criteria			0.00059	0.00014
Background (max conc)		2.45	0.00069	0.000264
Background (avg conc for HH calc)			0.00012	0.00008
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)		N	Y	Y
ECA acute		35.95		
ECA chronic		14.95		
ECA HH			0.00059	0.00014
No. of data points <10 or at least 80% of data reported non detect? (Y/N)		N	Y	Y
avg of data points		8.25		
SD				
CV calculated		N/A	N/A	N/A
CV (Selected) - Final		0.60	0.60	0.60
ECA acute mult99		0.32		
ECA chronic mult99		0.53		
LTA acute		11.54		
LTA chronic		7.89		
minimum of LTAs		7.89		
AMEL mult95		1.55	1.55	1.55
MDEL mult99		3.11	3.11	3.11
AMEL (aq life)		12.24		
MDEL (aq life)		24.56		
MDEL/AMEL Multiplier		2.01	2.01	2.01
AMEL (human hith)			0.00059	0.00014
MDEL (human hith)			0.00118	0.00028
minimum of AMEL for Aq. life vs HH		12.24107	0.00059	0.00014
minimum of MDEL for Aq. Life vs HH		24.55790	0.00118	0.00028
Current limit in permit (30-d avg)		N/A	N/A	N/A
Current limits in permit (daily)		37	N/A	N/A
Final limit - AMEL		12.24	0.000590	0.000140
Final limit - MDEL		24.56	0.001184	0.000281
Max Effl Conc (MEC), 1999-2001		9.5	N/A	N/A
Interim Limits				

1. As per Step 3 of Section 1.4 of the SIP, the CV is calculated using one-half the value of the detection limit for all values in the data set which are non-detect.
2. For data sets less than 10 points, CV is set at a default of 0.6 as per SIP.